Geology, Exploration and Mining in British Columbia

1974

British Columbia Department of Mines and Petroleum Resources

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INTRODUCTION

PREFACE

The first Minister of Mines of the Province of British Columbia was appointed in 1874. One of his responsibilities was "the duty of collecting information on the subject of the mining industries of the Province." This material, which consisted of reports by the Gold Commissioners and Mining Recorders of the Province, was published in the Annual Report of the Minister of Mines.

A Bureau of Mines was established by Parliamentary authority in 1895 and in 1896 was staffed by a Provincial Mineralogist and an assayer and chemist. Technical reports on mines and mining activities were prepared by them and published in the Annual Report, together with reports contributed by the Mining Recorders and Gold Commissioners.

Over the years with the expansion of the mining industry, the staff of the Department of Mines grew, as did the number and size of the technical reports on geology and mining that were still published in the Annual Report of the Minister of Mines. Over a period of nearly 75 years the Annual Report became known as the authoritative record of mining in the Province.

However, in 1969 because of the size to which the Annual Report had grown, it was decided to publish all geological and technical reports dealing with solid minerals in a separate volume entitled *Geology, Exploration and Mining in British Columbia.* Thus a new annual publication was initiated with chapters on exploration and mining related to metals (Chapter 2), placer (Chapter 3), structural materials and industrial minerals (Chapter 4), and coal (Chapter 5).

SOLID MINERAL PRODUCTION IN 1974

The value of solid minerals, that is, metals, industrial minerals and structural materials, and coal, exceeded a billion dollars for the first time. This value was $1,030,883,091 in

TABLE 1. SOLID MINERAL PRODUCTION OF BRITISH COLUMBIA, 1973 AND 1974

		1973		1974		1974 Production Paid for to Mines	
		Quantity	Value $	Quantity	Value $	Quantity	Value $
METALS							
Antimony	lb.	1,660,331	1,192,118	487,748	879,897	------	------
Bismuth	lb.	2,851	13,058	74,320	680,771	------	------
Cadmium	lb.	810,779	2,951,236	432,062	1,532,096	204,542	525,983
Cobalt	lb.	40,907	117,403	------	------	------	------
Copper	lb.	700,198,538	582,803,251	633,936,038	541,644,913	633,852,204	440,490,965
Gold—placer	oz.	3,831	311,524	1,452	232,512	1,452	232,512
Gold—lode, fine	oz.	185,986	18,117,268	160,791	26,749,083	158,748	22,027,877
Iron concentrates	tons	1,565,467	12,906,063	1,440,651	12,742,227	1,431,831	12,661,965
Lead	lb.	187,153,430	30,477,936	121,811,971	23,333,016	120,606,766	17,144,823
Molybdenum	lb.	30,391,463	51,851,509	30,426,216	60,716,942	30,426,216	60,716,942
Nickel	lb.	2,467,472	3,775,232	1,518,234	2,351,406	1,518,234	1,994,439
Silver	oz.	7,619,436	19,552,997	5,841,750	28,440,365	5,479,959	21,839,235
Tin	lb.	304,727	597,265	317,061	1,150,722	165,582	264,565
Tungsten (WO_3)	lb.	1,411,800	4,224,062	------	------	------	------
Zinc	lb.	302,874,331	62,564,751	171,374,439	59,582,753	164,160,930	42,289,883
Others		------	4,161,923	------	4,488,138	------	3,855,685
SUB-TOTALS		------	795,617,596	------	764,524,841	------	624,044,874

INDUSTRIAL MINERALS							
Asbestos	tons	108,966	21,102,892	91,936	27,398,900		
Diatomite	tons	565	9,526	1,756	32,600		
Fluxes	tons	46,228	106,371	37,976	206,049		
Granules	tons	34,321	857,643	34,774	1,025,615		
Gypsum and gypsite	tons	365,249	1,114,009	441,299	1,412,157		
Jade	lb.	154,251	306,808	7,738	18,613		
Sulphur	tons	316,035	4,187,387	227,789	3,068,507		
Others		------	285,028	------	513,773		
SUB-TOTALS		------	27,969,664	------	33,676,214	------	33,676,214
STRUCTURAL MATERIALS							
Cement	tons	950,772	24,935,624	981,472	25,828,823		
Clay products		------	5,590,290	------	6,615,128		
Lime and limestone	tons	2,153,936	3,633,870	2,312,561	4,297,547		
Rubble, riprap, and crushed rock	tons	2,843,010	4,160,009	2,966,857	5,715,219		
Sand and gravel	tons	33,963,934	35,379,590	34,657,850	35,611,346		
Building stone	tons	804	21,448	498	20,330		
SUB-TOTALS		------	73,720,831	------	78,088,393	------	78,088,393
COAL							
Coal—sold and used	tons	7,633,251	87,976,105	8,551,159	154,593,643	8,551,159	154,593,643
TOTALS – SOLID MINERALS		------	985,284,196	------	1,030,883,091	------	890,403,124

1974 compared to $985,284,196 in 1973 (*see* Table 1), an increase of 4.6 per cent. The chief cause of this continuing upward movement in the value of solid mineral production in British Columbia in the face of generally sagging metal prices and world-wide recession was the considerable increase in the quantity and value of metallurgical-grade coal produced. However, metals form the major component of production at $764,524,841 or 74.1 per cent of the total, in contrast to coal at $154,593,643 or 15 per cent, structural materials at $78,088,393 or 7.6 per cent, and industrial minerals at $33,676,214 or 3.3 per cent.

Table 1 also includes, for the first time, the quantities of metals paid for to the mines, excluding outward transportation and smelting and refining costs. The significantly lower value to the mines of metal produced is illustrated particularly by copper where the value produced was $541,644,913 but the value paid for was $440,490,965.

Copper is still the most important metal produced, representing 52.5 per cent of the total value of all mineral production, although production was down 66 million pounds from 1973.

The demand for molybdenum remained strong during the year with the quantity of 30.4 million pounds of contained molybdenum being slightly higher than the 1973 total. Values received for the molybdenum in the sulphides, oxides, and ferromolybdenum were all higher in 1974 and totalled $60.7 million compared to $51.9 million in 1973, an increase of 17 per cent.

The quantities of lead and zinc produced were significantly down, chiefly as a result of the prolonged strike at the Trail smelter of Cominco Ltd. but, with an increase in the average price during the year, the value was not as severely affected. The value of zinc production was $59,582,753 versus $62,564,751 in 1973 and the value of lead was $23,333,016 versus $30,477,936 in 1973.

The strong demand for coking coal resulted in an increase in production of 12 per cent from 7,633,651 tons to 8,551,159 tons which, with the significant increase in unit value, resulted in the considerable increase in value of 75.7 per cent or from $87,976,105 to $154,593,643.

These five commodities, copper, molybdenum, zinc, lead, and coal, represent 81.5 per cent of the total value of solid mineral production. Other commodities, with production in 1974 valued over 10 million dollars, include gold, iron, silver, asbestos, cement, and sand and gravel.

PROVINCIAL REVENUE FROM MINING COMPANIES

Direct revenue to the Provincial Government derived in 1974 from the mining sector of the mineral industry was as follows:

TABLE 2. REVENUE FROM MINERAL RESOURCES

Claim recording fees, lease rentals, and free miners' certificates, etc.		$ 1,786,457.07
Coal licences and rentals		215,269.45
Coal royalties		1,642,329.75
Mineral land taxes		2,640,022.84
Mineral royalties —		
Copper	$8,246,674.07	
Iron	155,925.04	
Lode gold	653,423.03	
Molybdenum	348,551.69	
Silver	116,705.50	
Zinc	6.04	9,521,285.37
Mining taxes		31,805,331.31
Rentals and royalties on industrial minerals and structural materials		583,371.93
TOTAL		$48,194,067.72

EXPENDITURE BY MINING COMPANIES

Major expenditures in 1974 by companies involved in the exploration, development, and mining of metals, minerals, and coal were as follows:

TABLE 3. EXPENDITURE (MINING COMPANIES)

Capital expenditures	$85,351,747	
Exploration and development	74,674,737	$160,026,484
Mining operations (metals, minerals, coal)		356,774,652
Mining operations (structural materials)		28,069,189
Repair expenditures		115,560,536
TOTAL		$660,430,861

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METAL MINES

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GENERAL REVIEW OF EXPLORATION AND METAL MINING

By A. Sutherland Brown

PRODUCTION

In 1974 the value of metals produced was fractionally lower than the 1973 record which in turn was double the previous records. The total value of metals produced in 1974 was $764,524,841. The quantity of metals and concentrates produced was down from the previous year for several reasons. However, trends of both value and quantity for individual metals were mixed and each metal behaved differently – some increasing, others decreasing in response to greatly differing factors.

One of the principal factors was highly varied metal price trends with sharp rises and declines in different metals at different times. At the beginning of the year base metal prices were at record highs that declined sharply in mid-year or later, although molybdenum and nickel advanced slightly against the general trend. Precious metals generally increased in price, silver quite erratically with an overall increase in average price for the year whereas gold prices were less erratic, advancing sharply late in the year. The first effects of these mixed price trends can be seen by comparing quantity produced with the value for the two years shown in the table of mineral production (see Table 1, Chapter 1).

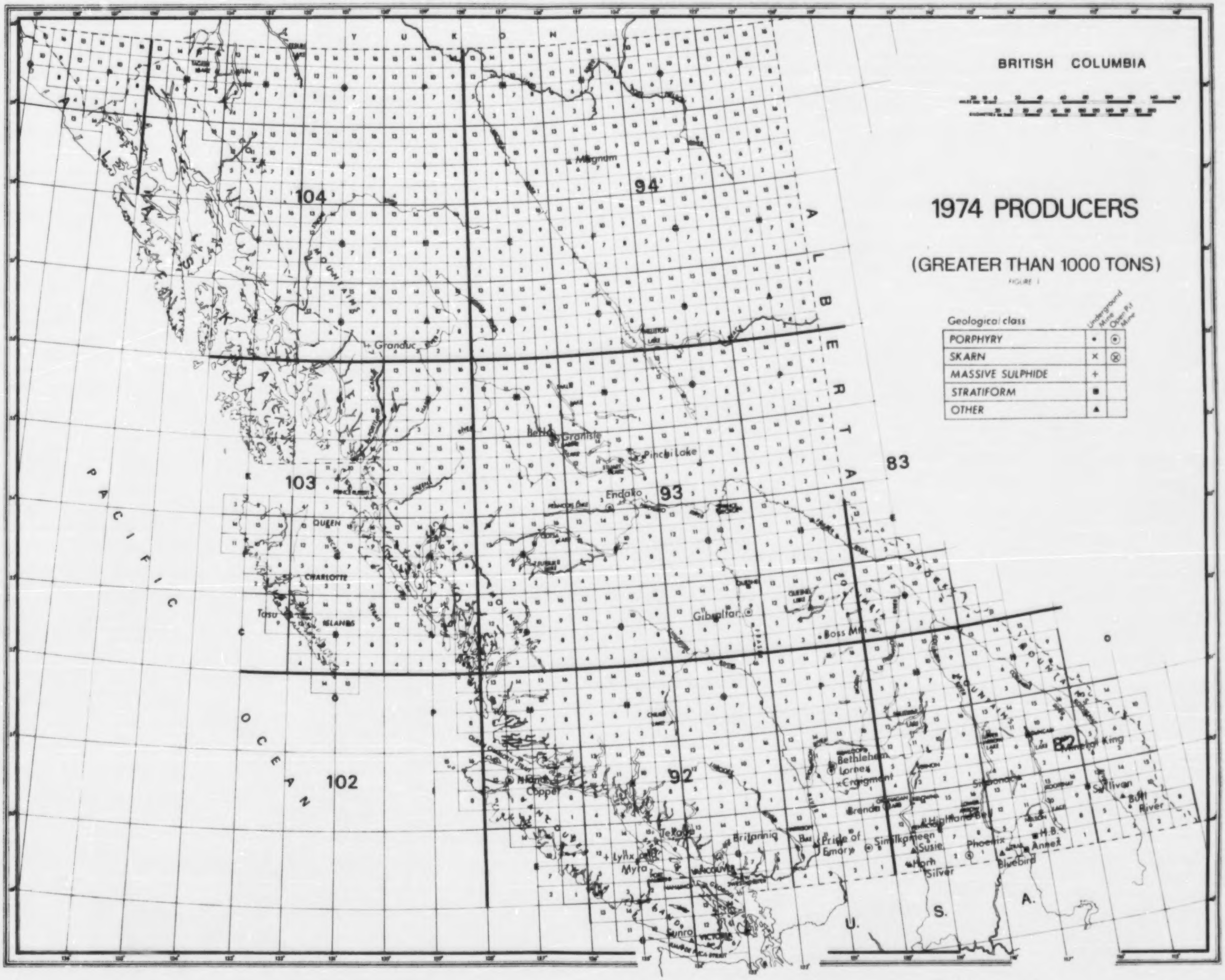
The trends for quantity and value of the metals were also greatly influenced by the prolonged strike at the Trail smelter of Cominco Ltd. which affected silver, lead, zinc, and related by-product metals, antimony, bismuth, cadmium, and tin. The quantity of these major metals was down by roughly a third, but the value was up for silver and nearly identical for zinc because of high average metal prices. Nevertheless zinc slipped to third place behind copper and molybdenum.

Copper remained the mainstay of the industry with a value of $541,644,913, constituting 70.8 per cent of the total value of metals produced. Quantity of copper produced, however, was down by 9.5 per cent, as a result of cutbacks on contracts by Japanese purchasers and by the closing of some mines, both resulting largely from world economic conditions. The value of production was only reduced by 7.1 per cent because of higher average price, 85.44 cents versus 83.23 cents.

The quantity of molybdenum production was marginally higher but an increase in price late in the year resulted in an increase in value of 17.1 per cent to $60,716,942 and second place again among metals.

Iron concentrate production and value were down marginally. No tungsten (WO_3) was produced in 1974.

In summary, quantities produced were down for copper, iron, lead, nickel, silver, and zinc but the value was up for gold, molybdenum, and silver.


BRITISH COLUMBIA
Geological class
Underground Mine
Open Pit Mine
PORPHYRY ● ⊙
SKARN × ⊗
MASSIVE SULPHIDE +
STRATIFORM ■
OTHER ▲
Y U K O N
A L B E R T A
P A C I F I C
O C E A N
U. S. A.
104
94
103
93
83
102
92
82
Magnum
Granduc
Bell
Granisle
Pinchi Lake
Endako
QUEEN
CHARLOTTE
ISLANDS
Tasu
Gibraltar
Boss Mtn
Island Copper
Texada
Lynx
Myra
Britannia
VANCOUVER
Sunro
VICTORIA
Pride of Emory
Bethlehem
Lornex
Craigmont
Brenda
Highland Bell
Similkameen
Susie
Horn Silver
Phoenix
Bluebird
H.B.
Annex
Sullivan
Bull River
Mineral King
Silmonac

1974 PRODUCERS

(GREATER THAN 1000 TONS)

FIGURE 1

MINING

In 1974, 54 mines in the Province produced in aggregate 90,263,912 tons of ore which was concentrated or shipped directly to a smelter (*see* Table 6). This tonnage represents a marginal drop from the previous year for the reasons previously mentioned. Of these 54 mines, 31 produced more than 1,000 tons and these mines are shown on a map of the Province, Figure 1. The same mines are shown on Figure 2, which is a graph of tonnage produced against gross value of metals. This figure clearly shows the separate groups (populations) of mines. Porphyry deposits, all of which are open-pit mines except Boss Mountain, follow a trend in which each million tons mined per year yields approximately $6 to $7 million in gross value. The other deposit types produced very much lower tonnages relative to value; most are underground mines of relatively high grade and they have a series of trend lines that can be related to geological characteristics but which together show a trend yielding approximately $36 million per year for each million tons mined. Of the mines producing more than 2 million tons per year and $20 million gross value, nine are low-grade porphyry open-pit mines and only four are underground mines of differing geological types. There were 12 mines, including Pinchi Lake mercury mine, smaller than the above limits that produced more than $1 million gross value, only two of which are currently open-pit mines. These open-pit mines, Tasu and Phoenix, are on the open-pit trend line as is Texada, formerly an open-pit mine. Open-pit mines produced 89.8 per cent of the tonnage mined and 68.5 per cent of the value.

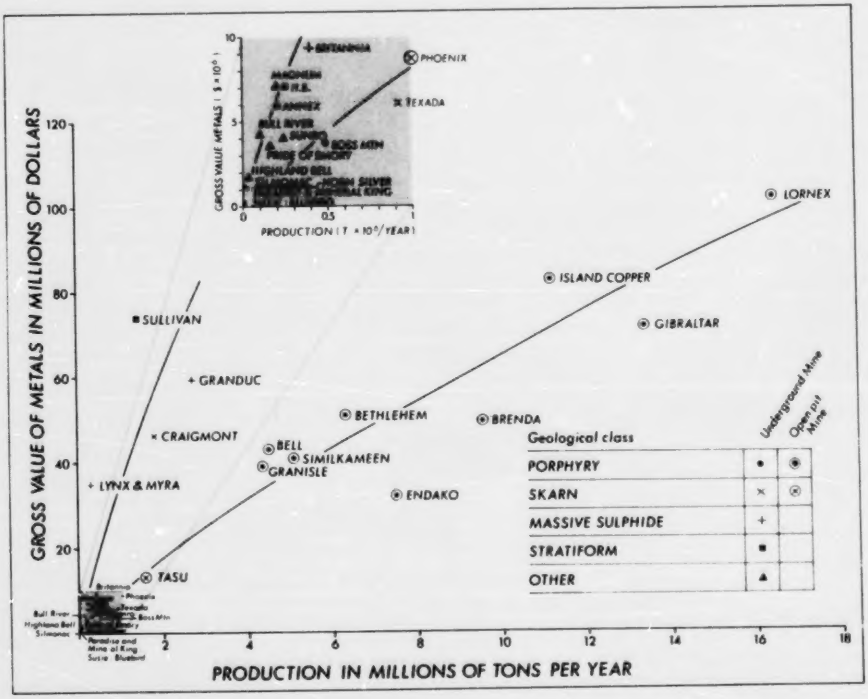


Figure 2. Graph of gross value of metals to tonnage produced, metal mines greater than 1,000 tons, 1974.

During the year Britannia mine closed after nearly continuous production for 68 years. Sunro, Pride of Emory, and Bull River mines closed because they had exhausted their ore reserves or the mineral reserve became uneconomic. The following underground mines opened or reopened: Magnum mine of Churchill Copper Corporation Ltd., Horn Silver mine of Dankoe Mines Ltd., Mineral King mine of Purcell Development Co. Ltd., and Denero Grande and Jewel mine of Colt Resources Ltd. The Boss Mountain mine reopened at the very end of 1973 and started shipping molybdenum concentrate in 1974.

CONCENTRATING

In 1974, 31 concentrators were in operation (*see* Table 6); ten treated copper ore, three treated copper-iron ore, four treated copper-molybdenum ore, two treated molybdenum ore, one treated nickel-copper ore, one treated zinc-copper-silver-lead ore, nine treated lead-zinc-silver ore, and one treated mercury ore.

SMELTING, REFINING, AND DESTINATION OF CONCENTRATES

The only base-metal smelter in operation in the Province is the lead-zinc smelter owned and operated by Cominco Ltd. at Trail. Concentrates of other metals are mostly exported to smelters in diverse parts of the world but mainly Japan and the United States. However, molybdenum concentrates at Endako are roasted to form molybdenum trioxide and also processed to make ferromolybdenum, and cinnabar concentrates are roasted at Pinchi to form mercury.

The smelter at Trail received concentrates and scrap from a number of sources: company mines within the Province (Sullivan and HB), outside the Province (Pine Point), and custom sources both inside and outside the Province. The smelter received 82,101 tons of lead concentrates and 136,745 tons of zinc concentrates from the Sullivan and HB mines, and 7,378 tons of lead concentrates and 308 tons of zinc concentrates from other British Columbia mines. The total value of concentrates, including by-product metal, from British Columbia treated at Trail was $83,219,493 or 10.9 per cent of metal production of the Province in 1974. The amount treated by the smelter was considerably below normal because of the strike that lasted four months.

Endako shipped products containing 15,981,105 pounds of molybdenum. Of this, 5,784 tons was molybdenum concentrates, 8,156 tons was molybdenum trioxide, and 201 tons was ferromolybdenum.

The value of these concentrates and percentage of the total metal production of the Province shipped or exported are not fully known but are approximately as follows: smelted or treated in British Columbia, $83,219,493 (10.9 per cent); shipped to other parts of Canada, $29,268,746 (3.8 per cent); exported to Japan, $534.5 million (69.9 per cent); exported to the United States, $46 million (6 per cent); exported to Germany, $6.8 million (0.9 per cent); and exported to Korea, $1.4 million (0.2 per cent); other plus unattributed, $63.3 million (8.3 per cent).

Copper concentrates produced in British Columbia were shipped to the following destinations: Eastern Canada, 69,181 tons; the United States, 60,561 tons; Japan, 1,013,510 tons; Germany, 12,144 tons; and Korea, 4,772 tons.

Copper-nickel concentrates produced in British Columbia, totalling 7,407 tons, were shipped to the Fort Saskatchewan refinery in Alberta.

Details of the disposition of molybdenum (30,426,216 pounds valued at $60,716,942) are not always ascertainable but, from known sales, slightly over one-half of the total was shipped to Europe and about one-third to Japan. The balance was disposed of to a multitude of countries.

Zinc concentrates, produced but not smelted in British Columbia, were shipped as follows: the United States, 35,757 tons; Japan, 18,359 tons.

Iron concentrates produced in British Columbia were shipped and exported as follows: Japan, 1,097,162 tons; the United States, 276,370 tons; Australia, 13,049 tons.

Lead concentrates, produced but not smelted in British Columbia, totalled 3,371 tons and were shipped to the United States.

DEVELOPMENT AND FEASIBILITY STUDIES

During 1974 two properties carried out extensive underground development work with a view to production for the first time: the Warman gold-silver-(lead-zinc) vein deposit of Northair Mines Ltd. and Mosquito Creek mine of Mosquito Creek Gold Mining Company Limited and Home Oil Company Limited. Considerable underground development work was also carried out on the following properties: OK (Alwin) mine by OK Syndicate (D K Mining, Inc. and International Minerals and Chemical Corp.); Price mine (Western Mines Limited); and Denero Grande and Jewel mine (Colt Resources Ltd.).

Feasibility studies were carried out at the British Columbia Molybdenum mine, Alice Arm, a former producing molybdenum porphyry mine of Kennecott Copper Corporation, now owned by Climax Molybdenum Corporation of British Columbia Limited. Three properties originally explored and owned exclusively by Kennco Explorations, (Western) Limited south of Houston in west-central British Columbia were further explored for feasibility by separate companies: Sam Goosly copper-silver massive sulphide property operated by Equity Mining Capital Limited; Berg copper-molybdenum porphyry deposit by Canex Placer Limited; and Huckleberry copper-molybdenum porphyry deposit by Granby Mining Corporation. The Afton syenitic porphyry copper deposit near Kamloops was subject to further drilling and complete feasibility studies by Teck Corporation Ltd.

EXPLORATION AND PROSPECTING

Indices of exploration activity are shown on Tables 4 and 5. Table 4 consists of exploration expenditures, claims recorded, etc., from departmental sources. Table 5 is a summary of information on exploration in Chapter 2 of this volume arranged by NTS quarter quadrangle against type and amount of work. Most indices in Table 4 show decreases except number of free miners' certificates. The expenditure according to the Mineral Development Division was down by 32 per cent and the number of companies by 35 per cent. The decline in staking was significant and was due in part to increased rental costs and anticipation of the introduction of the modified grid system. The number of certificates of work was also down from the very high numbers of the last 10 years during the crest of the porphyry copper and molybdenum exploration wave.

TABLE 4.

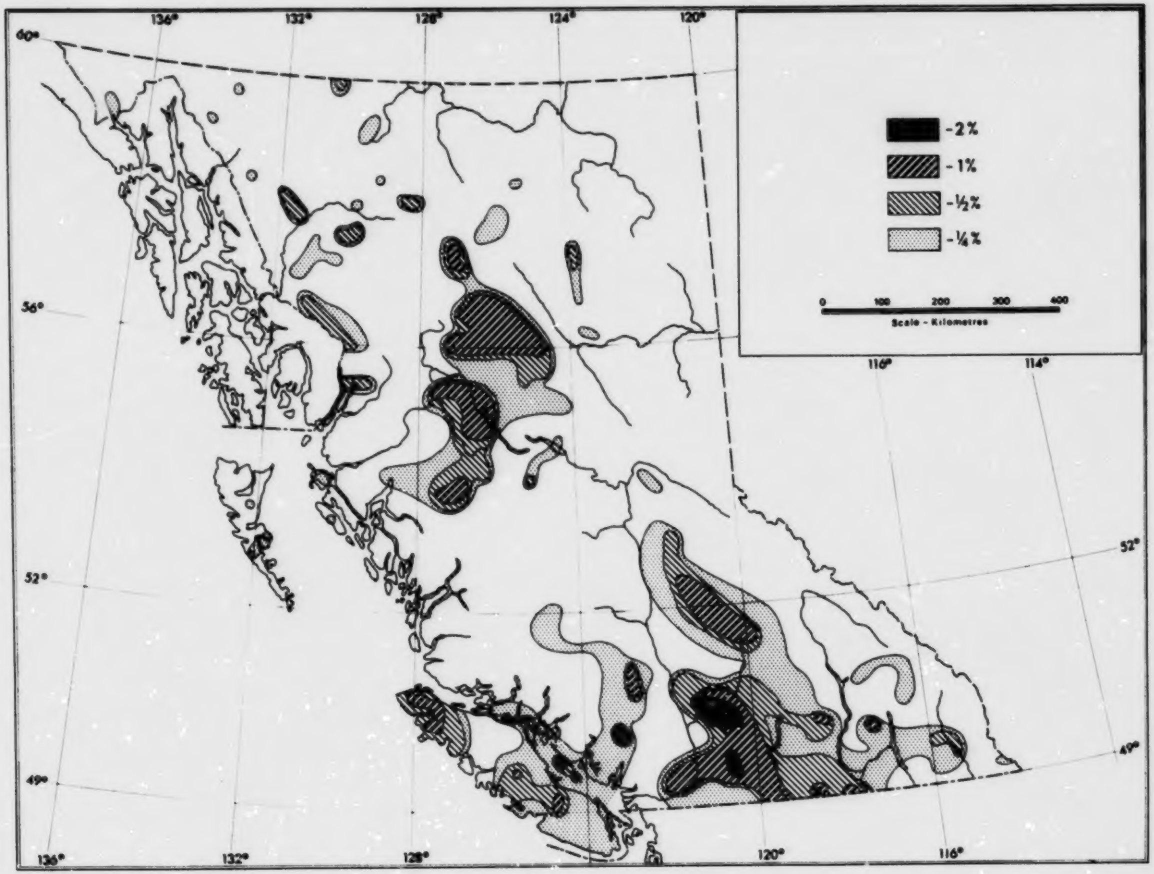
	1968	1969	1970	1971	1972	1973	1974
Exploration expenditure*	$35,000,000	$44,400,000	$46,000,000	$39,100,000	$38,200,000	$37,300,000	25,400,000
Number of companies*	389	422	481	407	389	352	228
Average exploration expenditure per company	89,974	105,161	96,361	95,945	98,226	106,072	111,404
Claims recorded	60,384	84,665	69,546	57,778	78,901	35,659	16,971
Certificates of work	66,229	88,954	118,633	106,704	97,573	128,641	48,071
Free miners' certificates –							
Individual	9,305	9,880	10,034	9,351	9,032	7,084	9,998
Companies	761	1,060	911	930	927	563	700
Average copper price (cents per pound)	54.2	66.7	58.7	46.7	44.8	83.23	85.44

*From returns to Mineral Development Division, Department of Mines and Petroleum Resources.

TABLE 5. SUMMARY OF EXPLORATION EFFORT*

			Geophysical Surveys				Geochemical Surveys		Physical			Drilling						
NTS	No. of Properties	Geol. Mapping (No. of surveys)	Airborne (line-miles)	IP (line-miles)	Ground EM + Others (line-miles)	Ground Mag. (line-miles)	Soil and Silt (No. of samples)	Rock Chip (No. of samples)	Trenching (feet)	Stripping (feet)	Underground Work (feet)	Surface D.D. (feet)	Rotary (feet)	Percussion (feet)	Underground D.D. (feet)	Linecutting (line-miles)	Road (miles)	Prospecting (No. of Assessment Reports)
82/SE	7	1	-----	-----	.6	.6	1,049	80	-----	75,000	700	1,186	-----	-----	-----	-----	-----	---
82/SW	58	27	50	26	-----	241	8,629	553	2,288	-----	776	22,946	-----	27,639	6,875	150.2	4.8	3
82/NW	26	15	585	-----	8.1	25.73	4,552	-----	12,735	482,000	440	17,965	-----	5,231	-----	23.1	8.6	4
82/NE	---	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---
83/SE	---	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---
92/SE	37	14	15	-----	4.7	242.7	9,325	430	4,985	5,000	789	28,115	589	2,955	16,023	165	.25	2
92/SW	29	12	15	-----	15	36.5	2,114	53	1,520	32,000	5,660	13,685	-----	5,030	14,797	53.5	2.25	5
92/NW	30	16	113	46.45	15.7	65.1	1,936	-----	1,368	1,400	109	46,687	-----	1,760	-----	53.8	5	---
92/NE	84	22	-----	254.63	217.3	734.3	8,784	107	6,730	153,800	8,476	94,821.5	1,200	24,372	3,374	272.65	40.17	2
93/SE	23	9	-----	167.6	22.7	206.5	3,005	312	4,700	14,890	-----	12,424	-----	7,860	-----	47.6	8.98	1
93/SW	13	4	-----	25.5	-----	28	1,451	-----	72	-----	-----	11,039	-----	17,377	-----	5.5	25.41	1
93/NW	57	18	-----	108.23	-----	256.15	7,734	412	7,787	1,510,000	800	62,930.3	-----	39,585	2,021	33.6	36.5	2
93/NE	2	2	-----	-----	-----	-----	91	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---
94/SE	9	4	-----	-----	-----	-----	2,767	56	147	-----	-----	22,432	-----	-----	-----	-----	-----	5
94/SW	38	22	502.3	45.74	9.12	92.28	9,613	1,077	270	-----	-----	55,106.5	-----	-----	-----	82.1	-----	---
94/NW	2	1	-----	-----	-----	-----	1,200	-----	270	-----	3,795	-----	-----	-----	8,077	-----	-----	---
94/NE	---	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---
103/SE	4	6	-----	-----	1	28	1,621	-----	75	-----	-----	484	-----	-----	-----	-----	-----	---
103/SW	2	1	-----	-----	-----	-----	-----	-----	1,400	-----	-----	.897	-----	2,077	-----	-----	1	---
103/NW	---	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---
103/NE	8	4	-----	-----	-----	-----	486	-----	400	240	280	13,062	-----	-----	-----	-----	-----	---
104/SE	17	11	-----	31	7.25	61.4	1,215	16	241	-----	466	20,274.5	-----	2,560	-----	49.8	-----	1
104/NW	4	3	-----	-----	-----	4.55	-----	-----	-----	-----	-----	7,201	-----	-----	-----	4.55	-----	---
104/NE	11	7	-----	4	24.4	5	200	-----	1,100	-----	-----	10,607	-----	1,430	231	-----	-----	1
114/NE	2	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---
TOTALS	464	201	1,280.3	709.15	325.87	2,027.81	65,772	3,096	46,088	2,274,330	22,291	441,862.8	1,789	137,876	51,398	941.4	132.96	27

*From Geological Division sources.



136°
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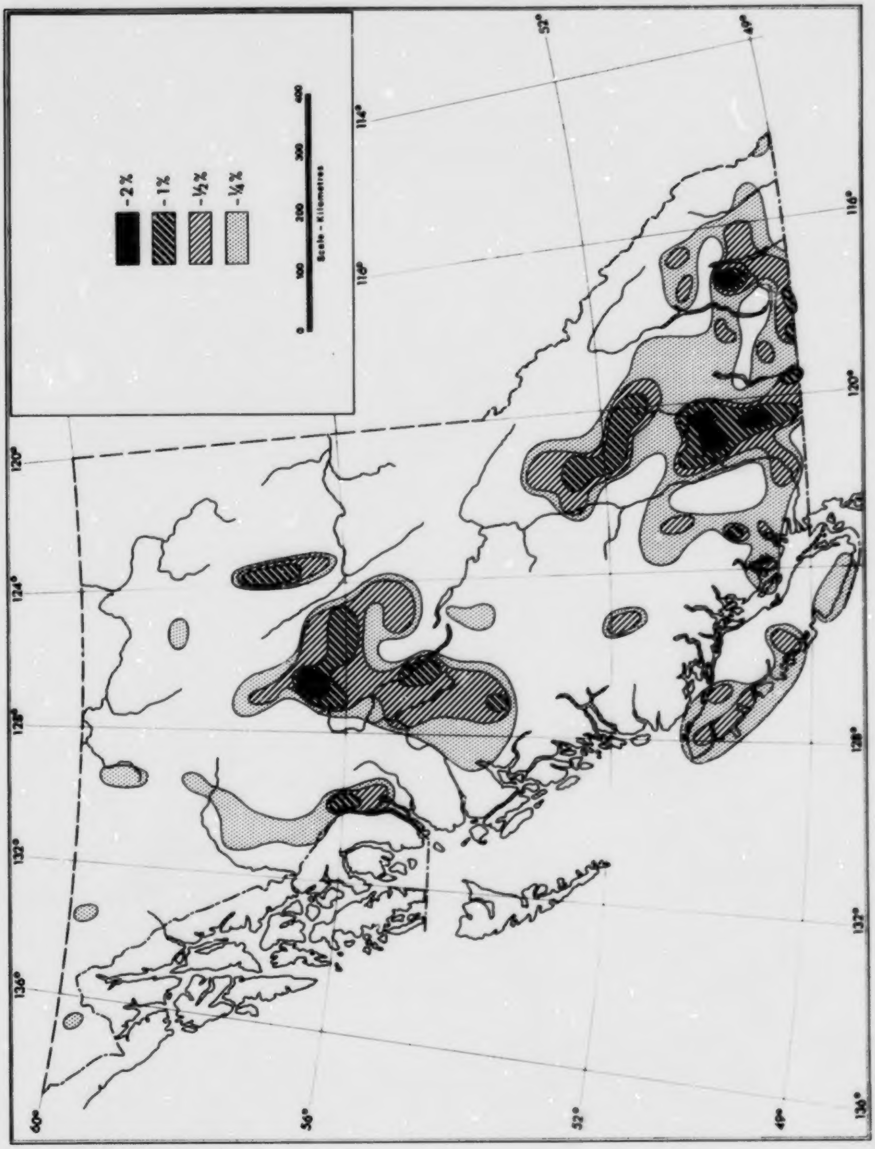
Scale - Kilometres

Figure 3. Distribution of metallic mineral properties in 1974.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60°
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116°
114°

Figure 4. Distribution of metallic mineral properties in 1973.

Table 5 is constructed from the returns to questionnaires mailed by the Geological Division to the Industry each year, augmented where warranted by information from Assessment Reports and reports of departmental personnel. The responsible replies to the questionnaire by the Industry form the principal source and we and the users of this volume have reason to be appreciative. The form of Table 5 has been changing over recent years to make it a more complete and usable summary of exploration activity. An unfortunate result is that it is not always directly comparable to tables of former years. Prior to 1973, work was listed by Mining Division; now it is by NTS quarter quadrangles. In 1972 the totals included only the returns to questionnaires but in 1973 included Assessment Reports and departmental returns also. In 1974, 545 geological, geophysical, geochemical, drilling, and prospecting reports were accepted for assessment credit. Together they represent not less than $2,333,059 for drilling and $542,250 for other work done on claims. The number of Assessment Reports is larger than the number of properties for several reasons, the principal one being the exceptionally large number of reports on work done in the previous year and submitted early in 1974. Also, in some instances several different reports apply to one property.

DISTRIBUTION OF EXPLORATION

The areal distribution of exploration work on metallic mineral properties in 1974 and 1973 can be compared by referring to the two maps of the Province (Figs. 3 and 4). These maps were originally developed for a slightly different purpose but they are used here to illustrate the gradation of activity and to compare the distribution from year to year. The percentage figures refer to the number of properties per unit area. It should be noted that yearly variation in the total number of properties is a factor that does not influence the appearance of the maps significantly. The number of properties is the collation formed by returns from Geological Division questionnaires, Assessment Reports, and District Geologists' and Mining Inspectors' reports and is coincident with the total number of reports in this chapter.

In 1974 the number of nonproducing properties with active exploration was 464 according to Geological Division sources, as shown on Table 5. A larger number was plotted to form Figure 3, including all property reports in Chapter 2 of this volume. Thus a small number of properties are included on which exploration was done in 1973 and picked up on Assessment Reports in 1974 and also producing mines whether or not they conducted exploration.

PATTERN OF DISTRIBUTION

In the south the pattern of exploration remained similar to 1973 with activity being concentrated in the Quesnel Trough, Nicola Belt, and Guichon Creek batholith. Increased activity resulted near Alta Lake, related to the success of Northair Mines Ltd. and in the Bridge River and Hope areas due to advancing gold prices. The most noticeable decrease in activity was in the Kootenays despite increased prices for lead, zinc, and silver. Major programmes were carried on at the Carolin gold prospect near Hope and near Carmi on the Ivy molybdenum-bearing breccia deposit.

Activity in the central part of the Province remained relatively high in the Skeena Arch region from Tahtsa Reach through Smithers and Babine Lake to Sustut River in the north. Properties of significance within this belt included the Poplar Lake porphyry copper prospect south of Houston, a syenitic porphyry copper property near Duckling Creek and the Jean porphyry copper-molybdenum property south of Nation Lakes.

Activity in the north in 1974 decreased after the 1973 rush to the Sustut area. In the latter area activity remained high but was much more restricted areally. Activity in the Robb Lake area was also down as a result of appraisal of results of the previous two years. In other parts of the north, important programmes were carried out at Adanac porphyry molybdenum deposit near Atlin, Rainbow Lakes copper-zinc property northeast of Dease Lake, and the Red porphyry copper property near Eddontenajon Lake.

The number of properties not in production on which major exploration programmes were undertaken was 14, lower than 1973 but comparable with 1972. Major programmes here defined as more than 10,000 feet of drilling or more than 1,000 feet of underground development were carried out at the following properties (*see* body of report for the details). A number of programmes fell just short of these previously used criteria.

DOE, IVY – 2 miles (3 kilometres) from Carmi.
COXEY MINE – 1.5 miles (2.5 kilometres) northwest of Rossland.
OK (ALWIN) MINE – 25 miles (40 kilometres) from Ashcroft.
PRICE – south end of Buttle Lake.
WARMAN – 7 miles (11 kilometres) north of Brandywine Falls.
OK – 12 miles (19 kilometres) north of Powell River.
EXPO – 18 miles (29 kilometres) west-southwest of Port Hardy.
MOSQUITO – 1.5 miles (2.5 kilometres) northwest of Wells.
NU, ELK – 5 miles (8 kilometres) southwest of Endako village.
JW, JEAN – 8 miles (13 kilometres) south of Tchentlo Lake.
BOOM, FRANKIE – on Kwanika Creek, 6 miles (10 kilometres) north of Tsayta Lake.
ROBB LAKE – 4 miles (6.5 kilometres) northeast of Robb Lake.
BRITISH COLUMBIA MOLYBDENUM MINE – 4 miles (6.5 kilometres) southeast of head of Alice Arm Inlet.
GOAT – 7 miles (11 kilometres) north-northwest of west end of Meziadin Lake.

TABLE 6 – METALLIC MINERAL PRODUCTION, 1974

Property or Mine	Mining Division	Location of Mine	Owner or Agent	See Page	Ore Shipped or Treated	Product Shipped	GROSS METAL CONTENT					
							Gold	Silver	Copper	Lead	Zinc	Cadmium
					Tons		Oz.	Oz.	Lb.	Lb.	Lb.	Lb.
Burnt Basin, 82E/1E	Greenwood	Paulson	Alvija Mines Ltd.	32	302	Lead concentrates, 13 tons; zinc concentrates, 21 tons	–	1,211	–	25,063	43,837	329
Denero Grande, Jewel, 82E/2E	Greenwood	Greenwood	Colt Resources Ltd.	39-51	726	Grade ore	223	1,437	–	4,490	1,984	–
Phoenix mine, 82E/2E	Greenwood	Greenwood	Granby Mining Corp.	34,35	1,012,427	Copper concentrates, 14,395 tons	10,203	86,572	7,700,711	–	–	–
Horn Silver mine, 82E/4E	Osoyoos	Keremeos	Dankoe Mines Ltd.	53	24,351	Silver concentrates, 912 tons; crude ore, 4 tons	440	218,939	9,432	35,229	24,484	–
Susie, 82E/4E	Osoyoos	Oliver	Horn Mines Ltd.	53,54	3,107	Crude ore	340	6,616	834	16,313	6,793	–
Highland Bell mine, 82E/6E	Greenwood	Beaverdell	Teck Corp. Ltd.	57,58	37,184	Lead concentrates, 1,037 tons; zinc concentrates, 287 tons; jig concentrates, 90 tons	296	313,278	998	278,594	287,813	894
Mother Lode (Independence), 82F/3E	Nelson	Salmo	Nugget Mines Ltd.	—	467	Crude ore, dump clean-up	126	126	241	2,411	933	–
Annex, 82F/3W	Nelson	Nelway	Reeves MacDonald Mines Ltd.	68,69	197,627	Lead concentrates, 2,926 tons; zinc concentrates, 12,526 tons	–	84,238	–	3,986,507	13,839,870	131,754
HB mine, 82F/3W	Nelson	Salmo	Cominco Ltd.	67	296,121	Lead concentrates, 4,423 tons; zinc concentrates, 15,808 tons	16	32,923	–	4,807,200	17,291,800	128,019
Red Rock (Michaely), 82F/3W	Nelson	Salmo	A. Marcovich, Trail	—	22	Crude ore	–	52	36	1,885	5,393	–
Bluebird, 82F/4W	Trail Creek	Rossland	Standonray Mines Ltd.	70	1,164	Crude ore; lead concentrates, 3 tons	57	19,262	1,904	69,428	77,230	–
IXL, 82F/4W	Trail Creek	Rossland	J. A. Ruelle, Rossland	—	47	High-grade ore	47	63	199	95	96	–
Midnight, 82F/4W	Trail Creek	Rossland	Consolidated Cinola Mines Ltd.	—	327	Crude ore	99	145	137	1,330	654	–
Rice (Quartz Mtn.), 82F/9E	Fort Steele	Sawmill Creek	Norex Mining and Development Ltd.	—	259	Crude ore	114	156	519	1,506	519	–
Sullivan mine, 82F/9E	Fort Steele	Kimberley	Cominco Ltd.	72-74	1,416,480	Lead concentrates, 77,878 tons; zinc concentrates, 120,937 tons; tin concentrates, 146 tons containing 165,582 lb. of tin	92	1,807,597	381,600	113,010,000	124,088,000	346,190
Bosun, 82F/14W	Slocan	New Denver	A. E. Avison, Kamloops	—	18	Crude ore	–	799	81	2,895	7,127	–
Enterprise, 82F/14W	Slocan	Slocan City	L. M. Fried, New Denver, O. Swenrude and T. Mazura, Calgary, Alberta	—	99	Crude ore	–	3,217	209	16,717	21,540	–
Silmonac (Minniehaha), 82F/14W	Slocan	Sandon	Kam-Kotia and Burkam Joint Venture	77	8,927*	Lead concentrates, 726 tons; zinc concentrates, 747 tons	–	162,803	–	798,085	893,445	5,914

* Estimated

Victor (Violamac), 82F/14W	Slocan	Sandon	E. Peterson, New Denver	–	15	Crude ore	4	1,776	77	19,800	525	–
Bluebell, 82F/15W	Slocan	Riondel	D. Pearce, Nelson	–	–	Lead concentrates, 9 tons	–	95	122	7,358	933	–
Bull River mine, 82G/11W	Fort Steele	Wardner	Placid Oil Co.	79,80	107,039	Copper concentrates, 9,178 tons	1,252	63,676	4,426,086	–	–	–
Dardanelle, Mother Lode, 82G/12E	Fort Steele	Wild Horse River	David O. Fredlund, Cranbrook	–	48	Crude ore	10	82	–	4,294	–	–
Silver Glance, Panama, 82K/3E	Slocan	New Denver	United Hearne Resources	82	81	Crude ore	1	4,614	243	971	810	–
Washington, 82K/3E	Slocan	Retallack, Three Forks	J.O.H. Nesbitt, Silverton	–	29	Crude ore	–	3,871	58	43,157	1,088	–
Paradise and Mineral King, 82K/8W	Golden	Spring and Toby Creeks	Purcell Development Co. Ltd.	82,83	6,280	Lead concentrates, 212 tons; zinc concentrates, 128 tons	–	11,680*	–	319,574*	401,418*	920*
Silver Cup, Towser, 82K/11W	Revelstoke	Ferguson	Chandler, Murphy Resources and Development Inc.	–	107	Crude ore	44	8,228	1,070	67,101	9,388	–
Sunro mine, 92C/8E	Victoria	River Jordan	Jordan River Mines Ltd.	164,165	241,604	Copper concentrates, 8,146 tons	1,001	12,300	4,808,337	–	–	–
Musketeer, Buccaneer, 92F/6E	Alberni	Tofino	New Musketeer Gold Mines Ltd.	175,176	95	High-grade ore	96	60	121	4,064	–	–
Texada mine, 92F/10E	Nanaimo	Texada Island	Texada Mines Ltd.	179,180	926,646	Iron concentrates, 346,500 tons; copper concentrates, 6,874 tons	1,137	46,700	2,967,458	–	–	–
Lynx mine and Myra mine, 92F/12E	Alberni	Buttle Lake	Western Mines Ltd.	181,182	297,290	Copper concentrates, 13,589 tons; lead concentrates, 5,796 tons; zinc concentrates, 40,665 tons	25,485	1,151,509	8,669,995	5,995,424	47,360,963	189,481
Britannia mine, 92G/11E	Vancouver	Howe Sound	Anaconda Canada Ltd.	190-197	399,164	Copper concentrates, 16,761 tons; copper precipitates, 581 tons	649	86,571	10,332,643	–	–	–
Pride of Emory mine, 92H/5E, 6W	New Westminster	Hope	Giant Mascot Mines Ltd.	105-113	156,733	Copper concentrates, 1,638 tons; nickel-copper concentrates, 7,404 tons containing 1,688,152 lb. of nickel	–	–	1,170,517	–	–	–
Goldrop, 92H/7E	Similkameen	Whipsaw Creek	C. Amyotte, Oliver	115	124	Crude ore	30	353	25	496	247	–
Similkameen mine (Ingerbelle), 92H/7E	Similkameen	Princeton	Similkameen Mining Co. Ltd.	115	5,086,088	Copper concentrates, 77,606 tons	28,006	115,110	41,226,398	–	–	–
Brenda mine, 92H/16E	Osoyoos	Brenda Lake	Brenda Mines Ltd.	126	9,549,588	Copper concentrates, 65,634 tons; molybdenite concentrates, 4,790 tons; molybdic oxide, 1,614 tons containing 7,086,707 lb. of molybdenum	4,447	289,915	39,021,320	–	–	–
Craigmont mine, 92I/2W	Nicola	Merritt	Craigmont Mines Ltd.	127-130	1,796,692	Copper concentrates, 91,587 tons; iron concentrates, 42,130 tons	–	–	53,486,430	–	–	–

* Estimated

TABLE 6 – METALLIC MINERAL PRODUCTION, 1974 *(continued)*

Lornex mine, 92I/6E	Kamloops	Highland Valley	Lornex Mining Corp. Ltd.	135	16,445,401	Copper concentrates, 167,888 tons; molybdenite concentrates, 3,544 tons containing 3,937,200 lb. of molybdenum	658	435,538	107,506,225	–	–	–
Bethlehem mine, 92I/7W	Kamloops	Highland Valley	Bethlehem Copper Corp.	146,147	6,346,402	Copper concentrates, 89,555 tons	684	177,807	58,515,975	–	–	–
Warman (Northair), 92J/3E	Vancouver	Callaghan Creek	Northair Mines Ltd.	200-202	141	High-grade ore	91	43	–	–	3,647	–
Island Copper mine, 92L/12E	Nanaimo	Port Hardy	Utah Mines Ltd.	214,215	11,200,000	Copper concentrates, 175,200 tons; molybdenite concentrates, 1,506 tons containing 1,267,500 lb. of molybdenum; rhenium shipments are confidential	42,100	218,900	84,191,000	–	–	–
Boss Mountain mine, 93A/2W	Cariboo	Big Timothy Mountain	Noranda Mines Ltd. (Boss Mountain Div.)	234	493,904	Molybdenite concentrates, 1,646 tons containing 1,846,992 lb. of molybdenum	–	–	–	–	–	–
Gibraltar mine, 93B/9W	Cariboo	McLeese Lake	Gibraltar Mines Ltd.	241,242	13,397,284†	Copper concentrates, 151,800 tons; molybdenite concentrates, 235 tons containing 282,014 lb. of molybdenum	–	141,594	82,158,095	–	–	–
Endako mine, 93K/3E	Omineca	Endako	Canex Placer Ltd. (Endako Mines Div.)	252	7,506,000	Molybdenite concentrates, 5,784 tons; molybdenum trioxide, 8,156 tons; ferro-molybdenum, 201 tons; total content, 15,981,106 lb. of molybdenum	–	–	–	–	–	–
Pinchi Lake mine, 93K/9W	Omineca	Pinchi Lake	Cominco Ltd.	254,255	**	Mercury	–	–	–	–	–	–
Cronin mine, 93L/15W	Omineca	Smithers	Hallmark Resources Ltd.	263,264	600	Lead concentrates, 40 tons; zinc concentrates, 71 tons	3	3,651	2,107	51,174	86,673	680
Granisle mine, 93L/16E	Omineca	Babine Lake	Granisle Copper Ltd.	265,266	4,373,075	Copper concentrates, 61,596 tons	19,863	209,084	40,643,225	–	–	–
Bell mine (Newman), 93M/1E	Omineca	Babine Lake	Noranda Mines Ltd. (Bell Copper Div.)	266	4,500,[illegible]	Copper concentrates, 84,636 tons	30,831	–	44,167,550	–	–	–
Silver Standard mine, 93M/5E	Omineca	Hazelton	George Braun, New Hazelton	269	230	Crude ore	20	9,879	–	9,150	22,168	–
Rio (Ute), 93M/7W	Omineca	French Peak	John H. Sargent, New Hazelton	272	28	Crude ore	2	3,423	2,755	8,010	1,023	–
Magnum mine, 94K/11W	Liard	Delano Creek	Consolidated Churchill Copper Corp. Ltd.	317	201,450	Copper concentrates, 14,256 tons	–	–	8,367,210	–	–	–
Tasu mine, 103C/16E	Skeena	Tasu Harbour	Wesfrob Mines Ltd.	320,321	1,559,980	Iron concentrates, 1,043,196 tons; copper concentrates, 9,248 tons	1,632	68,179	4,009,634	–	–	–
View Fraction, 104A/4W	Skeena	Stewart	N. Benkovich, Stewart	...	23	Crude ore	37	852	69	731	1,279	–
Granduc mine, 104B/1W	Skeena	Stewart	Granduc Operating Co.	332,333	2,708,731	Copper concentrates, 115,123 tons	10,134	617,847	64,055,959	–	–	–
Atlin-Ruffner, 104N/12E	Atlin	Atlin	Atlin Silver Corp.	...	36	Crude ore	2	1,695	36	4,354	–	–

† Includes 132,705 tons from Cuisson Lake Mines Ltd.
** Confidential

REPORTS ON METAL MINES

INTRODUCTION

The reports that form the body of this Chapter comprise a large number of brief tabulated summaries of information concerning known active properties and mines and a small number of detailed geological reports of properties, mines, and areas of mineral potential. The sources of information, organization of the report, locations, policy on names, and other Departmental publications during 1974 are discussed below.

SOURCES OF INFORMATION: (1) Geologists on the staff of the Geological Division, Mineral Resources Branch prepare reports on mineralized areas and mineral deposits for publication in *Geology, Exploration and Mining in British Columbia*. These reports are concerned either with areas and properties under active exploration, recent mineral discoveries of importance, or are part of a more general study of mineralized areas which will form the body of a subsequent bulletin.

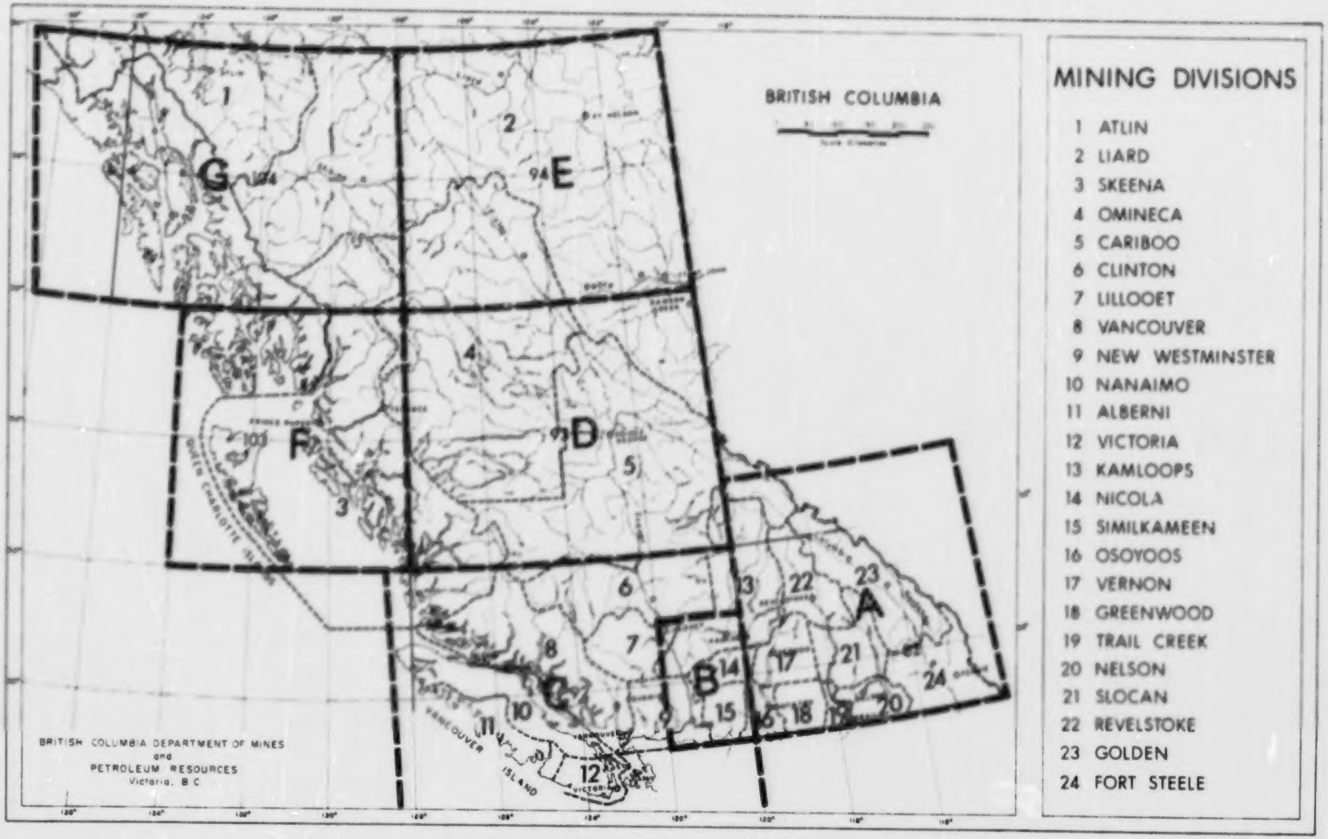
(2) A considerable amount of information in the following reports was supplied by exploration companies. Their cooperation in completing and returning exploration questionnaires for each of the properties on which they worked is gratefully acknowledged by the Department and should be greatly appreciated by all users of this report. In some instances this information is augmented by staff geologists or mine inspectors.

(3) Geological, geophysical, geochemical, drilling, and prospecting reports accepted for credit as assessment work contain a large amount of valuable information. The results of work presented in assessment reports that were accepted by April 1, 1975 are summarized and published herein. The last report summarized is Assessment Report 5375. Assessment reports accepted after April 1, concerning properties for which exploration questionnaires have already been submitted to the Department, are entered as references on the property write-ups until this manuscript is finalized for publication. Reports accepted in 1974 for work done in 1973 are not summarized if the work was previously reported on exploration questionnaires. Because of this policy not all assessment reports appear as references.

Assessment reports are available for study or for duplication at cost one year after the date of their submission.

ORGANIZATION: The reports are arranged sequentially according to National Topographic System map designation. In the NTS designation, the whole of Canada is divided into primary quadrangles, each 4 degrees latitude by 8 degrees longitude. Each is described by a number, the last digit of which indicates latitude and the first one or two indicates longitude (for example, 104). British Columbia is covered by six of these primary quadrangles except for minor areas. Figure 5 locates index maps (Figs. A to G) used in this report. They coincide closely to the primary quadrangles: for example, Fiqure A includes quadrangle 82 and part of 83; Figure B, 92H and 92I; Figure C, 92 and part of 102; Figure D, 93; Figure E, 94; Figure F, 103; and Figure G, 104 and part of 114.

Each primary quadrangle is subdivided into 16 map-sheets, each 1 degree latitude by 2 degrees longitude, and described by letters A to P (for example, 104G) proceeding from


BRITISH COLUMBIA
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VANCOUVER ISLAND
QUEEN CHARLOTTE ISLANDS
BRITISH COLUMBIA DEPARTMENT OF MINES and PETROLEUM RESOURCES Victoria, B.C.
MINING DIVISIONS
1 ATLIN
2 LIARD
3 SKEENA
4 OMINECA
5 CARIBOO
6 CLINTON
7 LILLOOET
8 VANCOUVER
9 NEW WESTMINSTER
10 NANAIMO
11 ALBERNI
12 VICTORIA
13 KAMLOOPS
14 NICOLA
15 SIMILKAMEEN
16 OSOYOOS
17 VERNON
18 GREENWOOD
19 TRAIL CREEK
20 NELSON
21 SLOCAN
22 REVELSTOKE
23 GOLDEN
24 FORT STEELE

Figure 5. Index map of mining divisions and Figures A to G.

the southeast corner to the west in the southern panel, then east to the next panel, and so on. Each lettered quadrangle is subdivided into 16 map-sheets, each 15 minutes latitude by 30 minutes longitude and numbered 1 to 16 in an analogous manner to the lettering (for example, 104G/7). Finally each sheet is halved east and west for maps of the 1:50,000 series and each is described, for example, 104G/7E and 104G/7W.

An index to published maps may be obtained by requesting Indexes 8 to 14 from the Department of Lands, Forests, and Water Resources, Victoria. The reports in this Chapter proceed by primary quadrangle from the southeastern part of the Province, Figure A, to the northwestern part, Figure G. Within each primary quadrangle the order proceeds from A/1E to A/1W to A/2E, and sequentially to P/16E. In some instances, exceptions are made so that adjacent prospects are not widely separated.

LOCATIONS: In this report a description of the property location is given as well as the latitude and longitude and NTS designation of the 1:50,000 map-sheet in which the property lies. The latitude and longitude given is either the centre of the property or the area of major work. NTS designation is that of the main showing(s) or for the majority of the claims. In cases where claims cover more than one NTS sheet, several NTS designations are given.

NAMES: Most often the name or names given to a property are those used for the Mineral Inventory. This is often the name by which the property was originally or formerly known (for example, Glacier Gulch, Magnum). Sometimes the name or names are those of one or more of the claims that constitute the group; occasionally a name is used which is derived from the name of the company owning the property (for example, Bralorne, Granisle). Where established to a reasonable degree of confidence, the Mineral Inventory number appears after the property name (for example, Providence, 82E/SE-1). Where practicable, all names of claims comprising a property are given under the heading 'Claims.'

OWNERSHIP: Whenever possible the owner (or owners) of the claims reported is stated. For located claims the owner is taken directly from Departmental records at the time the manuscript is being prepared. Unrecorded bills of sale and outstanding option agreements sometimes make it impossible to determine the owner at a given date. For Crown grants, unless an extensive search is made, it is sometimes impossible to be certain of their ownership.

In instances when the operator (the company or individual for whom the work was done or who paid for it) is known but the owner is uncertain, then only the operator is recorded; when the owner is also the operator, then only the owner is recorded; and when the owner is not the operator and both are known, then both are recorded.

PUBLICATIONS: *Geology, Exploration and Mining in British Columbia* continues to be the main vehicle for publication of data on metal, mineral, and coal exploration. However, a new yearly publication called *Geological Fieldwork* was initiated in 1974 to give a summary review of field results of the Geological Division as soon as possible after the end of the field season.

No *Bulletins* were published during the year.

The following preliminary geological maps were released in 1974:

Map No. 14, **Geochemical overlays, Copper Mountain Area** (two sheets), to accompany geological maps of Bulletin 59, Geology of the Copper Mountain Area, by V. A. Preto.

Map No. 15, **Geological Map of Aspen Grove Area** (five sheets plus descriptive notes), by V. A. Preto, T. E. Kalnins, N. A. Thompsen, and J. Nebocat.

Map No. 16, **Geological Map of Riondel Area,** by Trygve Hoy.

The Department published 35 maps in a new series called Mineral Deposit-Land Use maps at a scale of 1:250,000. These maps are intended to portray simply the relative mineral potential of the terrain of the Province. The maps issued cover approximately half the Province, the northern and central part west of the Rocky Mountain Trench and the southwestern fringe.

During the year 49 aeromagnetic maps of the Federal-Provincial joint programme were issued. These maps in southern British Columbia terminated one series and a series will be started in northern British Columbia.

The following papers were published outside the Department by the geological staff:

Garnett, J. A. **Geology and Copper-Molybdenum Mineralization in the Southern Hogem Batholith, B.C.,** *C.I.M.,* Bull., Vol. 67, No. 749, pp. 101-106.

.........., **A Mechanism for the Development of En-echelon Gashes in Kink Zones,** *Tectonophysics,* Vol. 23, No. 1/2, pp. 120-138.

Grove, E. W., **Deglaciation — A Possible Triggering Mechanism for Recent Volcanism,** *IAVCEI,* Proceedings of the Symposium on Andean and Antarctic Volcanology Problems, Santiago, Chile.

MacMillan, W. J. and Moore, J. M. Jr., **Gneissic Alkalic Rocks and Carbonatites in Frenchman's Cap Gneiss Dome, Shuswap Complex, British Columbia,** *Can. Jour. Earth Sc.,* Vol. 11, No. 2, pp. 304-318.

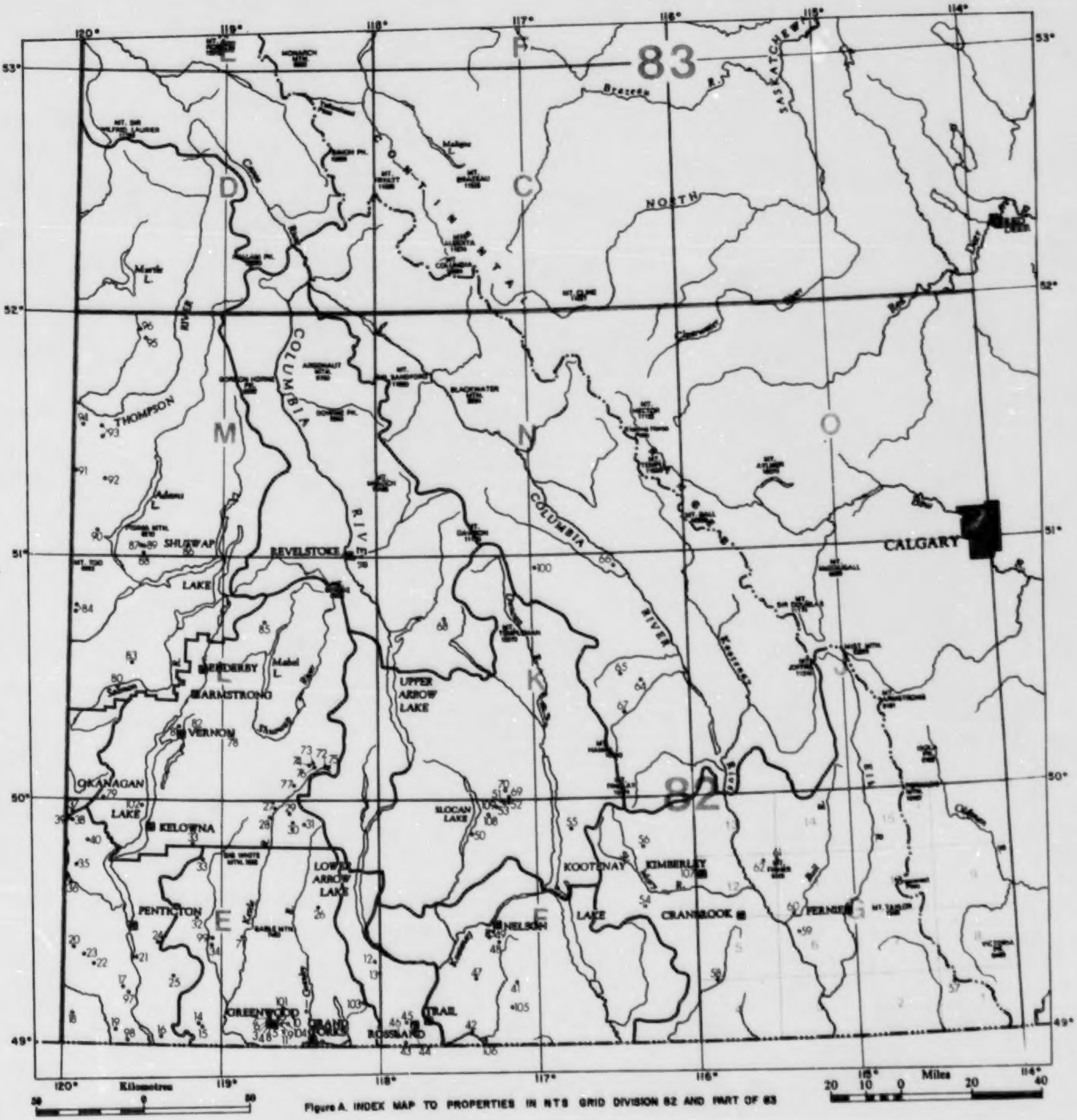
Muller, J. E., Northcote, K. E., and Carlisle, D., **Geology and Mineral Deposits of Alert — Cape Scott Map-Area, Vancouver Island, British Columbia,** *Geol. Surv., Canada,* Paper 74-8.

Pearson, D. E. and Lewry, J. F., **Large-Scale Fold Interference Structures in Mudjatik River Area of Northern Saskatchewan,** *Can. Jour. Earth Sc.,* Vol. 11, No. 5, pp. 619-634.

Sutherland Brown, A., **Vulcan's Forge, Western Branch,** *Geoscience Canada,* Vol. 1, No. 2, pp. 36-39.

.........., **Aspects of Metal Abundances and Mineral Deposits in the Canadian Cordillera,** *C.I.M.,* Bull., Vol. 67, No. 741, pp. 48-55.

Warren, H. V., Church, B. N., and Northcote, K. E., **Barium-Strontium Relationships, possible geochemical tool in search for ore bodies,** *Western Miner,* Vol. 47, No. 4, pp. 107-113.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Mabel L.
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OKANAGAN LAKE
KELOWNA
SLOCAN LAKE
KOOTENAY LAKE
KIMBERLEY
CRANBROOK
FERNIE
LOWER ARROW LAKE
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Figure A. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 82 AND PART OF 83

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SOUTHEAST BRITISH COLUMBIA
(NTS Division 82 Figure A)

PENTICTON 82E

BURNT BASIN, EVA BELL (82E/SE-81, 99, 100, 102, 103, 169) (Fig. A, No. 103)

LOCATION: Lat. 49° 10' Long. 118° 08' (82E/1E)
GREENWOOD M.D. Nine miles north-northeast of Christina Lake village, at the headwaters of Josh and Mollie Creeks, at approximately 4,500 feet elevation.

CLAIMS: HAVANA Fraction, GALENA Fraction, SHIRLEY 1 to 8, CHRISTINA 1, CHRISTINA 1 to 6 Fractions, BP 1 to 3 Fractions plus Mineral Leases M-52, M-118, M-119, M-131, M-183, M-196, M-197, M-205, and M-365 which comprise 15 claims including BURNT BASIN (Lot 1136), AJAX (Lot 1509), EVA BELL (Lot 2031), and HALIFAX (Lot 3042).

OWNER: Donna Mines Ltd.

OPERATOR: ALVIJA MINES LTD., 13769 Colebrook Road, Surrey, V3S 4N7.

METALS: Silver, lead, zinc (production shown on Table 6).

DESCRIPTION: Rossland Group volcanic rocks predominate in the vicinity of the Burnt Basin. The succession contains considerable limestone and argillaceous sedimentary rocks locally altered to skarn. Mineralization is irregular.

WORK DONE: Trenching, 4,000 yards on Eva Bell; road construction, one-half mile on Eva Bell and Halifax.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 36.

SHICKSHOCK-SAILOR BOY (82E/SE-77) (Fig. A, No. 1)

LOCATION: Lat. 49° 09' Long. 118° 29' (82E/1W)
GREENWOOD M.D. Eight and one-half miles north of Grand Forks at the head of Lime Creek, 1.4 miles west of the Granby River, at approximately 3,000 feet elevation.

CLAIMS: SHICKSHOCK (Lot 992), SAILOR BOY (Lot 1093) plus BAC 31 and 32 Fractions, IKE 7, 8, 22 to 25.

OWNER: GRANBY MINING CORPORATION, Box 490, Grand Forks.

METALS: Iron, copper, silver, gold.

DESCRIPTION: A wedge of Brooklyn limestone, argillite, and sharpstone conglomerate has been enveloped by Nelson diorite and extensively replaced by skarn. The skarn contains irregular bodies of massive magnetite and pyrrhotite carrying minor pyrite, chalcopyrite, and sphalerite.

WORK DONE: Linecutting and magnetometer survey, 2.5 line-miles of grid; six trenches totalling 1,300 lineal feet; geological mapping of trenches, 1 inch equals 20 feet; 106 chip samples taken over most of the length of trenching covering Shickshock, Sailor Boy, and Ike 24, 25.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 34 (Ike); Assessment Reports 3780, 5057.

FANNY JOE, SUNNYSIDE (82E/SE-159, 160) (Fig. A, No. 11)

LOCATION: Lat. 49° 03′ Long. 118° 38′ (82E/2E)
GREENWOOD M.D. Three miles southeast of Greenwood, on the west and north sides of Attwood Mountain, between 3,700 and 5,300 feet elevation.

CLAIMS: Mineral Lease M-401 comprising FANNY JOE (lot 729S) and SUNNYSIDE (Lot 2879) plus TW 1 to 16, BEV 1 to 6.

OWNER: SILVER FALLS RESOURCES LTD., 625, 510 West Hastings Street, Vancouver.

METALS: Silver, lead, zinc, copper.

DESCRIPTION: Mineralization occurs in quartz veins in andesite and limestone near their contact with granite and granodiorite.

WORK DONE: Trenching, 56,808 feet on Bev 4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1923, p. 182; 1933, p. 161; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 37.

TAM O'SHANTER, IVA LENORE (82E/SE-130, 164) (Fig. A, No. 3)

LOCATION: Lat. 49° 05′ Long. 118° 43.5′ (82E/2E)
GREENWOOD M.D. Two miles west of Greenwood, on and extending south from Buckhorn Creek near its head, between 3,000 and 4,000 feet elevation.

CLAIMS: Mineral Leases M-388 comprising TAM O'SHANTER (Lot 2405) and M-389 comprising SALAMANCA FR. (Lot 2902), IVA LENORE (Lot 1262), VICEROY FR. (Lot 1722), ARLINGTON FR. (Lot 1110), NO. 9 (Lot 822S) plus GOTCHA 1 to 20, GOTCHA 21 Fraction.

OWNERS: John M. MacLean and H. H. Shear.

OPERATOR: MASCOT MINES & PETROLEUMS LIMITED, 900, 837 West Hastings Street, Vancouver.

METALS: Copper, molybdenum, gold.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite occur as disseminations in a quartz diorite stock which intrudes andesite and chert of the Knob Hill Formation.

WORK DONE: Magnetometer survey, 5 line-miles, 400-foot grid spacing and geochemical soil survey, 240 samples, 400-foot grid spacing, 5 line-miles covering Gotcha 7 and 8; percussion drilling, 17 holes totalling 3,515 feet on Iva Lenore, Tam O'Shanter, and Gotcha 3, 5, 6, 7, 8, 20, and 21 Fraction; road construction, one-half mile on Gotcha 7 and 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 381; 1973, p. 37; Assessment Report 5023.

SKYLARK, LAST CHANCE (82E/SE-4, 11) (Fig. A, No. 9)

LOCATION: Lat. 49° 05.5′ Long. 118° 39′ (82E/2E)
GREENWOOD M.D. One and three-quarter miles east of Greenwood, on and extending south from Twin Creek, between 3,400 and 4,000 feet elevation.

(82E/2E)

CLAIMS: SKYLARK (Lot 763), LAST CHANCE (Lot 753), IRON CAP (Lot 1574), TRIUMVIRATE (Lot 1771), SILVER CLOUD (Lot 1218), SILVER CLOUD FR. (Lot 454S), MEADOW LARK (Lot 1712), HOPE No. 2 (Lot 1849), ARCADIA (Lot 3135), DENVER (Lot 764), SMILAX FR. (Lot 1064), SILVER KING (Lot 1097).

OWNER: H. H. SHEAR, Box 159, Greenwood.

METALS: Silver, gold, lead, zinc.

DESCRIPTION: Andesite tuffs are cut by quartz veins containing galena, pyrite, and grey sulphides (probably ruby silver).

WORK DONE: Surface diamond drilling, five holes totalling 106 feet on Skylark (Lot 763).

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1937, p. D35; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 306; Assessment Report 5181.

BUCKHORN, MOREEN FR. (82E/SE-51, 154) (Fig. A, No. 4)

LOCATION: Lat. 49° 05.5' Long. 118° 43' (82E/2E)
GREENWOOD M.D. One and one-quarter miles west of Greenwood, extending south from Motherlode and Greyhound Creeks across Buckhorn Creek, at approximately 3,000 feet elevation.

CLAIMS: BUCKHORN (Lot 1107), MOREEN FR. (incorrectly MAUREEN) (Lot 1709), XLCR, SYD M JOHNSON (Lot 1961), ECB (Lot 827), Mineral Leases M-226 comprising TINTAC (Lot 1461), RED METAL (Lot 1568) and M-227 comprising LITTLE RUTH (Lot 881S) plus HOUND 1 to 3, HOUND 2 Fraction, JIM McRAE 1 and 2 Fractions, FRANTIC Fraction.

OWNER: San Jacinto Explorations Limited.

OPERATOR: MASCOT MINES & PETROLEUMS LIMITED, 900, 837 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite occur as disseminations in a quartz diorite stock which intrudes andesite and chert of the Knob Hill Formation.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet and magnetometer survey, 1.5 line-miles, 50 by 100-foot grid spacing covering Buckhorn; percussion drilling, eight holes totalling 1,001 feet on Buckhorn and Moreen Fr.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 381; Assessment Reports 881, 4125, 5023.

PHOENIX MINE (82E/SE-13 to 15, 18 to 30, 161, 163) (Fig. A, No. 104)

By J.B.C. Lang

LOCATION: Lat. 49° 06' Long. 118° 36' (82E/2E)
GREENWOOD M.D. Approximately 3.5 miles east of Greenwood, on Knob Hill and Montezuma Ridge, extending south to Attwood Mountain.

(82E/2E)

CLAIMS: Approximately 230 claims including STEMWINDER, OLD IRONSIDES, KNOB HILL (Lots 588 to 590), GREY EAGLE (Lot 793), FOURTH OF JULY (Lot 922), AETNA (Lot 978), VICTORIA (Lot 933), GOLD DROP FR. (Lot 1252), etc., plus PAC, ATT, WENDY, COY, etc.

OWNER: GRANBY MINING CORPORATION (formerly The Granby Mining Company Limited), Phoenix Copper Division, Box 490, Grand Forks.

METALS: Copper, gold, silver (production shown on Table 6).

DESCRIPTION: Copper mineralization occurs as disseminations of chalcopyrite in limy rocks and to a lesser extent in massive magnetite lenses injected between limy sedimentary rocks and footwall argillite. Gold and silver occur in solid solution and as minute blebs in pyrite and chalcopyrite grains.

WORK DONE:

The bulk of the ore milled came from the marginal ore stockpile. As of December 31, 1974, ore reserves were as follows: 963,410 tons of ore grading 0.807 per cent copper; 2,816,920 tons of marginal ore grading 0.40 per cent copper; and 2,385,299 tons of waste.

A 4-foot by 9-foot Hardings ball mill was placed in operation in April.

The reclamation programme was continued, with the planting of grasses, fertilizing, and the transplanting of indigenous shrubs to abandoned tailings pond.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 39, 40.

AH THERE (82E/SE-49) (Fig. A, No. 5)

LOCATION: Lat. 49° 06′ Long. 118° 42′ (82E/2E)
GREENWOOD M.D. One mile west of Greenwood, astride the road at the locality of Deadwood, at approximately 3,000 feet elevation.

CLAIM: AH THERE (Lot 1960).

OWNER: R. J. McCrae.

OPERATOR: MASCOT MINES & PETROLEUMS LIMITED, 900, 837 West Hastings Street, Vancouver.

METALS: Copper, gold, silver.

DESCRIPTION: Pyrite and chalcopyrite occur in limy skarn and volcanic rocks.

WORK DONE: Percussion drilling, five holes totalling 530 feet on Ah There.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 381 (Greyhound, Motherlode); Assessment Reports 881, 2845 (incorrectly Anthere), 2897, 5023.

MONTROSE FR. (Fig. A, No. 8)

LOCATION: Lat. 49° 06′ Long. 118° 42′ (82E/2E)
GREENWOOD M.D. One and one-quarter miles west of Greenwood, approximately 200 feet southwest of Motherlode Creek at the locality of Deadwood.

(82E/2E)

CLAIM: MONTROSE FR. (former Lot 2654).

OWNER: FURY EXPLORATIONS LTD., 433, 355 Burrard Street, Vancouver.

DESCRIPTION: The claim is completely covered by overburden in which angular, pyritized, skarn material has been revealed. Two earlier drill holes also reported skarn material.

WORK DONE: Geochemical soil survey, 20 samples taken at 200-foot intervals on two lines covering Montrose Fr.

REFERENCE: Assessment Report 5158.

MOTHER LODE, GREYHOUND (82E/SE-34 to 39, 50) (Fig. A, No. 7)

LOCATION: Lat. 49° 06′ Long. 118° 42′ (82E/2E)
GREENWOOD M.D. One mile west of Greenwood, extending northeast from Motherlode Creek to Wallace Creek, between Deadwood and Greyhound Creeks, from 3,000 to 4,000 feet elevation.

CLAIMS: FOX 1 to 6, MT 1 to 17, NM 1, NM 6 Fraction, BIRTHDAY Fraction, HARDSCRABBLE Fraction, ROGMA ROCK Fraction, BUTTE CITY, TORONTO, HOUND 1 Fraction; MOTHER LODE (incorrectly MOTHERLODE) (Lot 704), SUNSET (Lot 788), CROWN SILVER (Lot 789), GREYHOUND (Lot 1014), FLORENCE FR. (Lot 1470), DON JULIO FR. (Lot 1283), OFFSPRING (Lot 1254), ST. LAWRENCE (Lot 1255), TEN BROCK (Lot 1221), PRIMROSE (Lot 927), SUNFLOWER (Lot 916), COD (Lot 928), GREAT HOPES (Lot 602); plus four mineral leases: M-122 comprising PEACOCK (Lot 1243), M-294 comprising ST. EUGENE FR. (Lot 2321), GOLD BUG (Lot 895), M-306 comprising PLUTONIA (Lot 884), M-315 comprising SF FR. (Lot 832), HILL FR. (Lot 2945).

OWNER: MASCOT MINES & PETROLEUMS LIMITED, 900, 837 West Hastings Street, Vancouver.

METALS: Copper, gold.

DESCRIPTION:

The property is underlain by the Brooklyn limestone of the Attwood Group, granite and granodiorite of Jurassic age, and pulaskite porphyry of Tertiary age. Chalcopyrite, pyrite, pyrrhotite, and magnetite or hematite occur along fractures and interstitially between grains in a skarn zone formed at the contact of the limestone and granitic rocks.

Skarn at the Greyhound pit is unique in the district and is characterized by an absence of magnetite and an abundance of pyrite. Rocks throughout the Greyhound pit are intensely brecciated and altered with considerable development of epidote, chlorite, hematite, and actinolite. Mineralization occurs in parallel and coalescing lenses trending east-west and dipping southerly. Some isolated zones are probably a result of faulting.

The copper mineralization and associated gold and silver values are similar to the Phoenix and Summit camps (Emma-Oro Denoro). Both the Mother Lode and Oro Denoro are in contact with igneous rocks of the Wallace Creek batholith.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Mother Lode, Crown Silver, etc.; magnetometer survey, 3.5 line-miles, 100-foot grid spacing covering Peacock, Hound 1 Fraction, and Crown Silver; geochemical soil survey, 75 samples, 100-foot grid spacing, 2 line-miles covering Peacock and Hound 1 Fraction; percussion drilling, 37 holes totalling 6,787 feet on Mother Lode, Crown Silver, Sunset, etc.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 38; Assessment Reports 881, 2845, 2897.

PLUTO (82E/SE-166) (Fig. A, No. 6)

LOCATION: Lat. 49° 06′ Long. 118° 42.5′ (82E/2E)
GREENWOOD M.D. One and one-quarter miles west of Greenwood, on Motherlode Creek immediately northwest of the locality of Deadwood, at approximately 2,900 feet elevation.

CLAIM: PLUTO (Lot 2393).

OWNER: Mrs. M. I. Roylance.

OPERATOR: MASCOT MINES & PETROLEUMS LIMITED, 900, 837 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Limy skarn, which contains pyrite, epidote, hematite, and chlorite, is overlain by grey arkose carrying 1 to 5 per cent pyrite. Near the skarn the arkose exhibits an increase of chlorite, epidote, and hematite.

WORK DONE: Percussion drilling, three holes totalling 1,030 feet on Pluto.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 380 (Greyhound, Motherlode); Assessment Reports 881, 2845, 2897, 5023.

FREMONT (82E/SE-165) (Fig. A, No. 2)

LOCATION: Lat. 49° 06.5′ Long. 118° 40′ (82E/2E)
GREENWOOD M.D. Extending east from Highway 3 at Greenwood and south from Providence Creek; Lot 1011 is astride the highway, 1,000 feet north of Providence Creek.

CLAIMS: FREMONT (incorrectly FREEMONT) (Lot 1217), WARWICK FR. (Lot 616S), ADMIRAL (Lot 2379), CORONATION (Lot 3365), SPOKANE (Lot 1011).

OWNER: E. J. TAYLOR-SMITH, 2905 West 37th Avenue, Vancouver.

METALS: Gold, silver, copper.

DESCRIPTION: Chert or silicified rock of the Anarchist Group is intruded by granodiorite and diorite of the Greenwood stock, and all rocks have been injected by quartz-calcite veins. Younger dykes of feldspar porphyry and lamprophyre intrude chert and granodiorite. Two veins, or segments of the same vein, on the Fremont claim carry pyrite, chalcopyrite, and a trace of native silver along their walls.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1917, p. 213; Assessment Report 5124.

(82E/2E)

ORO DENORO (82E/SE-60, 62 to 64) (Fig. A, No. 10) By G. Addie

LOCATION: Lat. 49° 08′ Long. 118° 33′ (82E/2E)
GREENWOOD M.D. Six miles east-northeast of Greenwood, extending east from the headwaters of Coltern Creek across Highway 3, at approximately 3,500 feet elevation.

CLAIMS: JEEP 1, 8 to 13, 15, 16, 18, DENORO Fraction, BREYFOGLE Fraction, REMINGTON Fraction, CHEMICAL Fraction, ONTARIO, MAB Fraction, MAB 2 to 5, APRIL Fraction, JOINER Fraction, ORO DENORO (Lot 692), MINNE MOOR (incorrectly MINNIE MOORE) (Lot 593), EMMA (Lot 591), DUPLICATE (Lot 863), JUMBO (Lot 592), BC FR. (probably Lot 882), MARY B (Lot 1568), NORTON FR. (Lot 986), BLUE BELL (Lot 2136), NOVELTY FR. (Lot 949), MAY (Lot 1409), VASHTI (Lot 950), R BELL (Lot 1506), ERWIN (incorrectly IRWIN) (Lot 1691), CORDICK (Lot 625).

OWNER: W. E. MacArthur Jr.

OPERATOR: GRANBY MINING CORPORATION (formerly The Granby Mining Company Limited), 1700, 1050 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION:

Observations are limited to the present new pit development on Lot 692 (Oro Denoro). The copper mineralization with associated gold and silver values occurs in a massive garnet skarn developed from limestone of Middle Triassic age (*Geol. Surv., Canada,* Paper 65-1, pp. 56-60). In general the mineralization is identical to the Motherlode and the Phoenix deposits, except that zinc values are present (especially associated with magnetite). At the new pit a 4-inch calcite vein, striking north and dipping 63 degrees east, contains massive chalcopyrite blebs, which are very magnetic. Some of the chalcopyrite has a film of soft black mineralization which is believed to be covellite or chalcocite. A dusting of hematite occurs on many small fractures.

A good description of the intrusive rocks by N. D. McKechnie is contained in the 1965 Annual Report of the Minister of Mines and Petroleum Resources.

The main copper camps of this area are peripheral to the Wallace Creek batholith.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and magnetometer survey, 40 line-miles, 400 by 100-foot grid spacing covering all claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1897 to 1911, 1916, 1917, 1965, pp. 171, 172; 1967, pp. 232, 233; 1968, pp. 233-235; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 430; *Geol. Surv., Canada,* Map 828; Map 1-1957; Map 10-1967; Paper 65-1, pp. 56-60; Seraphim, R. H., 1956, Geology and Copper Deposits of Boundary District, B.C., *C.I.M.,* Trans., Vol. LIX, pp. 384-394; Assessment Reports 67, 117, 178.

DENERO GRANDE, JEWEL (82E/SE-55, 151) (Fig. A, No. 101)

By B. N. Church and J. Winsby

LOCATION:	Lat. 49° 10′ Long. 118° 37′ (82E/2E) GREENWOOD M.D. Approximately 6.5 miles by road northeast of Greenwood, one-half mile southeast of the south end of Jewel Lake, at an elevation of approximately 4,000 feet.
CLAIMS:	DENERO GRANDE (Lot 851), JEWEL (Lot 850), ANCHOR (Lot 1021), ENTERPRISE (Lot 1022), ETHIOPIA (Lot 932), PERSERVERENCE (Lot 3088), GEM Fraction (Lot 1416), MASSACHUSETTS (Lot 1401) plus DENORO CHICO and DENORO CHICO Fraction.
OWNER:	W. E. McArthur.
OPERATOR:	COLT RESOURCES LTD., 711, 475 Howe Street, Vancouver.
METALS:	Gold, silver, silica (production shown on Table 6).
DESCRIPTION:	

INTRODUCTION: Renewal of mining activity near Jewel Lake in the Greenwood area is the direct result of recent increases in the price of gold and silver, a good local market for flux-grade silica, and the success of Colt Resources Ltd. in gaining control of key Crown-granted claims in the vicinity of the old Dentonia mine.

Investigation of the property was completed in the latter part of June, 1974. The new underground workings were examined together with detailed surface mapping of the Dentonia mine area and reconnaissance mapping of the surrounding region to the north and east (Fig. 6).

PHYSIOGRAPHY: Jewel Lake, at an approximate elevation of 3,750 feet, occupies part of a strong northeast-trending lineament which cuts across a line of hills of which Mount Pelley, elevation 5,300 feet, is the southern terminus. Jewel Creek and Goldrop Creek, draining the northwest and southeast slopes of Mount Pelley respectively, flow separately into Eholt Creek to the south, an important tributary of Boundary Creek.

During Pleistocene time, the area was extensively glaciated such that the valley bottoms and lower slopes are now mantled by thick moraines, gravel, and clay. Glacial striae measurements indicate two directions of ice movement: one at about 065 degrees and the other at 135 degrees. Ice movement was presumably southerly.

A mixed second growth of pine, larch, and cedar has grown in the vicinity of numerous old logging operations on Mount Pelley. Part of the area, about 150 acres, is covered by brush and deadfalls, the site of a recent burn.

Current clear-cut logging in the vicinity of Colt Resources Ltd.'s new shaft extends almost to the boundaries of the Denero Grande claim. Only a few large cottonwood trees remain standing.

HISTORY: Prospecting in the Jewel Lake area began about 1895, attention being focused on auriferous quartz veins on claims centrally located in what was then known as the Long Lake camp. The early history has been described in detail by Hedley, 1941:

> 'From the first the *Jewel* received most attention on account of the substantial widths of quartz exposed and the fact that good values in gold were obtainable locally. The vein was seen to cross into the *Denero Grande* but the extension through the *Enterprise, Anchor* and *Ethiopia* was

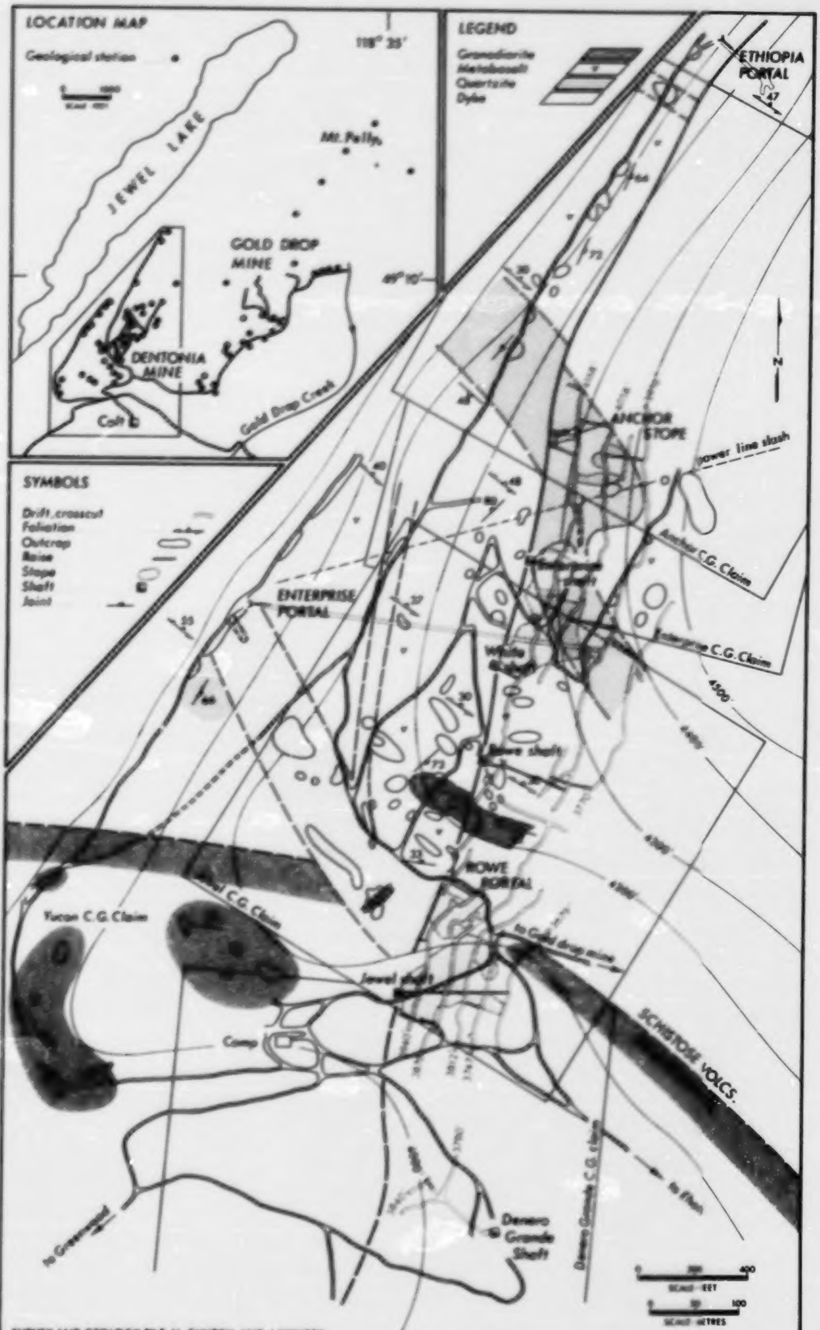

LOCATION MAP
Geological station
JEWEL LAKE
118° 35'
Mt. Pelly
GOLD DROP MINE
49° 10'
DENTONIA MINE
Colt
Gold Drop Creek
LEGEND
Granodiorite
Metabasalt
Quartzite
Dyke
SYMBOLS
Drift, crosscut
Foliation
Outcrop
Raise
Stope
Shaft
Joint
ETHIOPIA PORTAL
N
ANCHOR STOPE
power line slash
Anchor C.G. Claim
ENTERPRISE PORTAL
Enterprise C.G. Claim
White Elephant shaft
Rowe shaft
ROWE PORTAL
Yucan C.G. Claim
Jewel C.G. Claim
Jewel shaft
to Gold drop mine
SCHISTOSE VOLCS.
Camp
to Greenwood
Denero Grande Shaft
Denero Grande C.G. claim
4500
4400
4300
4200
0 200 400
SCALE–FEET
0 50 100
SCALE–METRES
SURVEY AND GEOLOGY BY B.N. CHURCH AND J. WINSBY

Figure 6. Geology of the Denero Grande, Jewel mine, Jewel Lake area, Colt Resources Ltd.

> apparently not at first clearly recognized. Local, high values were found on other claims and the occurrence of tellurides was reported at an early date.
>
> 'The *Jewel* was staked by Louis Bosshart and was early acquired by the British Columbia Prospecting Syndicate. In 1898 it passed into the hands of the Jewel Development Syndicate which was reorganized to the Jewel Gold Mines Limited of London, England, which company shipped 2,000 tons of ore to the Granby smelter at Grand Forks. A further reorganization took place in 1905 and considerable metallurgical testing was done, but it was not until 1909 that the Jewel-Denero Mines Company of Edinburgh commenced the erection of a 15-stamp mill, designed to save part of the values by concentration and the remainder by cyanidation. The mill was completed in 1912 but was found to be unsatisfactory, so the flow-sheet was changed to an all-sliming cyanide treatment in June, 1913; 3,855 tons of ore was milled in the latter half of that year. In 1914, 16,526 tons and in 1915, 6,724 tons of ore was milled when operations ceased. All early production came from the Jewel shaft.
>
> 'The property lay idle for 10 years until, in 1926 and ensuing years, George White and others of Greenwood made some small shipments and investigated the possibilities of the ground. In 1931 Dentonia Mines, Limited was formed. Serious work by this company commenced in 1933 through the old upper adit, and drifting connected the Rowe, White and Enterprise shafts of former years; this work encountered wide ore of better grade than was formerly anticipated, and work was started on a 100-ton concentrator at the old mill-site and with utilization of the old buildings. In 1934 the lower long cross-cut was driven and milling commenced at 90 tons per day in the plant with a rated capacity of 140 tons daily. The old Jewel shaft was dewatered, and considerable development work was done in the newer or Enterprise section of the mine. Milling proceeded on about a 100-ton basis during 1935 but in 1936 the year's tonnage was only 11,612. Development at depth proved disappointing, and work was suspended at the end of 1936.'

A total of 66,531 tons of ore grading 0.32 ounce of gold and 2 ounces of silver per ton was mined in the period 1934 to 1936, recovery being 85.5 per cent.

> 'Before closing, a cyanide plant was installed to treat the tailings, but this operation did not prove to be very satisfactory without regrinding and the plant was shut down in September, 1938.'

The period 1936 to 1945 was one of relative inactivity. Production amounted to only a few thousand tons of ore which was shipped by lessees mainly from the Enterprise, Lakeside, and Ethiopia claims.

In 1945, Dentonia Mines, Limited decided to renew exploration. To 1947 this work was primarily diamond drilling, drifting, and sampling confined to the old mine on the Enterprise and Anchor claims. Tunnels were extended toward the Jewel workings from the Enterprise and some drifting was undertaken in the Anchor section. Production commenced in November 1947 and continued through to March 1948. Failure of the operation was due to excessively low grades; approximately 3,900 tons was mined in this period with a total metal content of 243 ounces of gold, 1,525 ounces of silver, 1,763 pounds of lead, and 189 pounds of zinc.

Present production, averaging about 40 tons per day, began in March, 1974, from an extension of the Dentonia quartz vein, about 600 feet south of the Jewel shaft on the 250-foot level below Colt's new Denero Grande shaft. Currently, this is the only significant gold-silver operation in the province.

GENERAL GEOLOGY: The Jewel Lake area is underlain by a complex of metamorphic rocks, mostly of sedimentary and volcanic origin (probably Paleozoic age), and a large Cretaceous granodiorite intrusion. Small dykes and sill-like bodies, feeders to nearby Tertiary lavas, pervade these units (Fig. 6).

Bedded Rocks: The volcanic and sedimentary rocks are not always distinguishable, both being fine grained and medium or dark coloured, and primary structures such as bedding and flow banding are locally confused with foliation or gneissosity. Generally, sedimentary rocks are brittle, being mostly quartz-rich; however, compositions vary and some biotitic varieties have about the same competence as the amphibole-rich volcanic rocks.

A more positive distinction is made by X-ray quartz determinations. The sedimentary rocks show marked variation in quartz content, 17 to 91 per cent, the average being 63 per cent on 28 analyses. In sharp contrast, the volcanic rocks average only 6 per cent quartz on 24 analyses and seldom exceed 10 per cent quartz except where silicified.

The bulk of the sedimentary rocks are located on the north part of the property, especially in areas near of the Anchor and Ethiopia workings. Similar rocks also occur near the summit and on the southeast slopes of Mount Pelley.

In thin section these sedimentary rocks consist of equigranular quartz, one-tenth to one-quarter millimetre in diameter, with varying admixtures of plagioclase, biotite, some garnet and magnetite, and less commonly amphibole, chlorite, muscovite, and occasionally andalusite.

Few of the rocks are true quartzites although the term has been used frequently by mine geologists. 'Quartz wacke' or 'lithic wacke' are more appropriate terms; precise classification is difficult because of metamorphic alteration. Chemical analysis of a typical sample shows more than 25 per cent impurities composed mostly of alumina, iron oxide, and magnesia (*see* No. 1 in the accompanying table of chemical analyses).

The volcanic rocks are most abundant on the Jewel claim between Rowe portal and White shaft and along the road to the Ethiopia portal on the Anchor claim. A possible continuation of this formation is exposed to the southeast near the Eholt road. In the Gold Drop area, smaller zones and lenses of volcanic rock are intercalated or interfolded with the sedimentary units.

The massive character of the volcanic rocks, noted both in surface exposures and mine workings, is probably due to a combination of intense regional metamorphism and primary structures. Field and detailed petrographic data indicate that at least some of the original rock formed as a result of massive accumulations of lava flows and even pillow lava. Crosscutting feeder dykes and sills are significant and contribute to the massive aspect of the volcanic formations.

In thin section these rocks are found to consist of green amphibole, usually in the range of 40 to 70 per cent, and smaller amounts of plagioclase, quartz, magnetite, and titanite. Epidote, calcite, and quartz are present in abundance only near veins or small fissures.

Generally, the minerals are fine grained, less than 1 millimetre in diameter, randomly oriented, and irregular or feathery in outline. In some cases, this growth of metamorphic minerals overprints igneous textures retaining some evidence of the original intergranular or subophitic grain boundaries.

The compositional range of the volcanic suite is indicated by arc fusion analysis of 24 samples. Refractive indices of the artificially prepared glass varies from 1.572 to 1.608, the samples being mostly basalt (Fig. 7). Chemical analysis of a representative sample (R.I. 1.604) compares favourably with Daly's 1933 average basalt (*see* Nos. 7 and 8 in the accompanying table of chemical analyses).

Igneous Intrusions: The igneous intrusions include a large granodiorite pluton, exposed on the Denero Grande and Yucon claims, and a host of young pulaskite and lamprophyre dykes found throughout the property.

The granodiorite is a rather homogeneous, medium-grained, grey body cutting the volcanic formation. Modal analysis of a typical hand specimen is as follows:

	Per Cent
Quartz	25.1
Orthoclase and microcline	20.8
Plagioclase (An$_{30-45}$)	40.3
Amphibole and epidote	9.3
Biotite and chlorite	2.7
Apatite Titanite Magnetite	1.8

The plagioclase generally occurs as oscillatory zoned, subhedral plates, 2 to 4 millimetres in diameter, interspersed with anhedral quartz, either as solitary or composite grains, and poikilitic orthoclase or microcline with occasional myrmekitic boundaries. The amphibole is a pleochroic blue-green variety which forms solitary subhedral prisms and occurs interstitially with biotite, magnetite, and apatite. Alteration is usually minor with some replacement of amphibole by epidote and conversion of biotite and chlorite.

Chemical analysis of this rock compares closely with Daly's average granodiorite (*see* Nos. 5 and 6 in the accompanying table). The corresponding norm calculation showing 23.58 per cent quartz and 65.93 per cent combined feldspar is in good agreement with the modal results, 25.1 per cent quartz and 61.1 per cent feldspar, and X-ray determinations on 13 samples which show an average of 27.1 per cent quartz.

Among the smaller igneous intrusions, granodiorite dykes are important. These have been found at several locations including the areas south of the Enterprise portal and Rowe shaft and in the underground workings. They appear to be about the same composition as the main granodiorite and are probably offshoots from this body.

Pulaskite dykes are numerically most important. Several types have been encountered on the property including both quartz-bearing and undersaturated types.

The largest pulaskite dyke, having an outcrop width of about 250 feet, is exposed between the Enterprise portal and the Jewel shaft. This rock is characterized by large sanidine phenocrysts, 1 to 2 centimetres in length, embedded in a fine-grained, brownish

TABLE OF CHEMICAL ANALYSES

	1	2	3	4	5	6	7	8	9	10
Oxides Recalculated to 100:–										
SiO_2	72.73	63.55	62.22	62.08	66.43	65.69	50.63	49.87	46.05	34.93
TiO_2	0.89	0.93	0.44	0.33	0.50	0.57	1.06	1.38	1.73	1.52
Al_2O_3	11.74	17.17	18.37	18.52	15.81	16.11	14.36	15.96	9.65	10.27
Fe_2O_3	0.66	1.63	1.64	2.30	2.09	1.76	1.89	5.47	2.01	5.86
FeO	5.24	1.95	1.83	1.73	2.29	2.68	8.55	6.47	6.26	6.85
MnO	0.17	0.07	0.11	0.11	0.11	0.07	0.22	0.32	0.13	0.01
MgO	2.88	1.09	0.67	0.69	1.81	1.93	6.76	6.27	15.38	18.84
CaO	1.44	1.89	1.47	1.79	4.86	4.47	13.72	9.09	12.18	14.68
Na_2O	1.18	4.62	6.23	6.50	3.31	3.74	2.14	3.16	1.33	1.53
K_2O	2.60	6.60	6.48	5.74	2.29	2.78	0.47	1.55	3.79	2.92
P_2O_5	0.47	0.50	0.54	0.21	0.50	0.20	0.20	0.46	1.49	2.59
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Oxides as Determined:–										
H_2O+	1.76	0.68	1.19		0.92		1.36		1.87	
H_2O-	0.30	0.21	0.29		0.19		0.18		0.39	
CO_2	1.65	0.43	0.06		0.13		0.13		1.52	
SO_2	0.06	0.04	0.10		0.04		0.06		0.34	
BaO	0.20	0.07	0.10		0.13		0.01		0.30	
SrO	0.02	0.07	0.08		0.07		0.04		0.08	
Molecular Norms:–										
Qz		5.64	------		23.58		------		------	
Or		38.77	37.60		13.75		4.27		------	
Lc		------	------		------		------		13.31	
Ks		------	------		------		------		------	
Ab		41.36	49.35		30.23		19.55		------	
Ne		------	3.31		------		------		7.07	
An		6.53	2.91		21.95		27.95		9.12	
Wo		1.13	1.69		1.03		15.40		20.34	
En		3.01	1.81		5.09		17.75		------	
Fs		0.58	1.06		1.43		10.65		------	
Fo		------	------		------		0.92		42.12	
Fa		------	------		------		------		1.30	
Mt		1.69	1.68		2.20		2.01		4.35	
Ill		1.29	0.59		0.69		1.50		2.39	
		100.00	100.00		100.00		100.00		100.00	

1 – Biotite metaquartzite at the Gold Drop portal.
2 – Coarse biotite feldspar porphyry dyke 300 feet west of the Rowe portal.
3 – Biotite feldspar porphyry dyke 350 feet northwest of the Rowe portal.
4 – Average pulaskite, Daly, 1933, No. 22, p. 12.
5 – Granodiorite intersected by crosscut 100 feet northwest of the Denero Grande shaft on the 250 level.
6 – Average granodiorite, Daly, 1933, No. 45, p. 15.
7 – Metabasalt 2,000 feet east of the Jewel shaft.
8 – Average basalt, Daly, 1933, No. 58, p. 17.
9 – Lamprophyre dyke at the face, north drift 280 feet northwest of the Denero Grande shaft on the 250 level.
10 – Average alnoite, Daly, 1933, No. 135, p. 28.

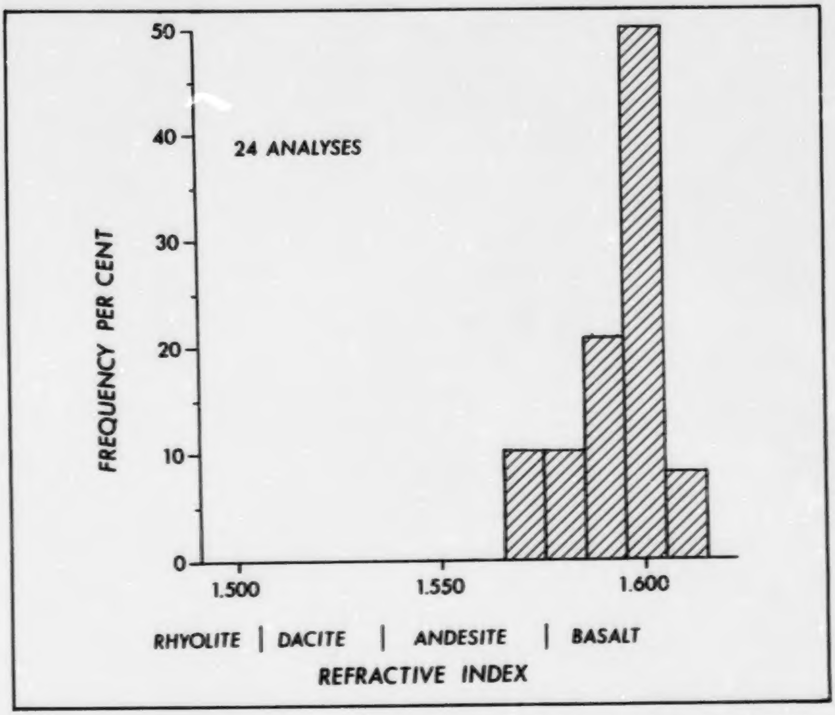


Figure 7. Compositional range of metamorphosed volcanic rocks, Jewel Lake area.

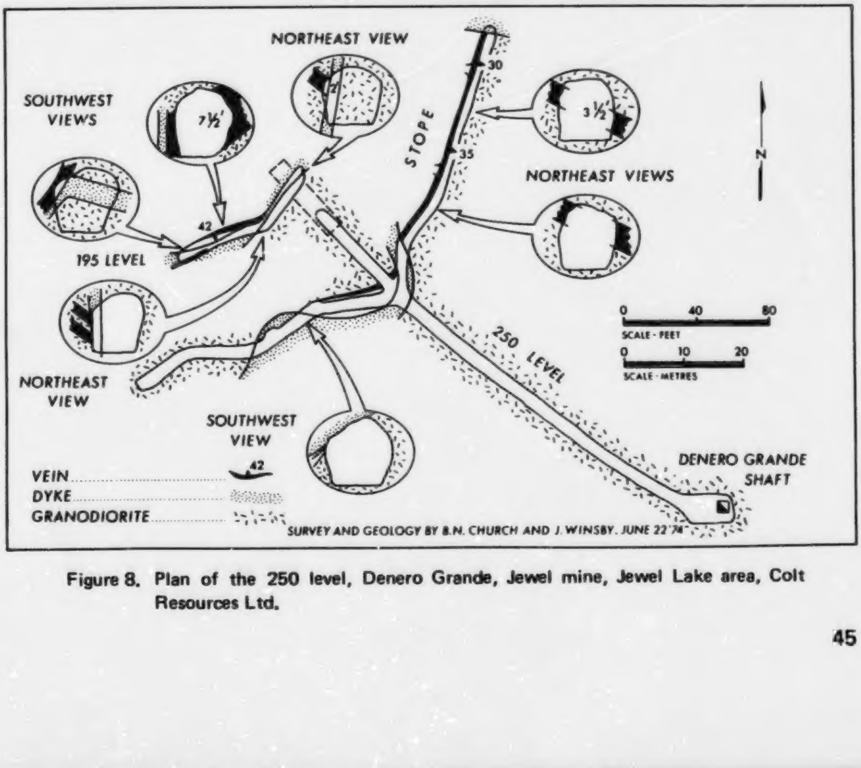

NORTHEAST VIEW
SOUTHWEST VIEWS
7½'
2'
3½'
30
STOPE
35
NORTHEAST VIEWS
N
42
195 LEVEL
0 40 80
SCALE - FEET
0 10 20
SCALE - METRES
250 LEVEL
NORTHEAST VIEW
SOUTHWEST VIEW
VEIN
42
DYKE
GRANODIORITE
DENERO GRANDE SHAFT
SURVEY AND GEOLOGY BY B.N. CHURCH AND J. WINSBY. JUNE 22'74

Figure 8. Plan of the 250 level, Denero Grande, Jewel mine, Jewel Lake area, Colt Resources Ltd.

matrix. In thin section, the sanidine crystals are often found with smaller plagioclase, pyroxene, and biotite inclusions. Subhedral, reddish brown, biotite books and rosette-shaped glomerophenocrysts of plagioclase, 1 to 4 millimetres in diameter, are scattered sparingly throughout. The fine-grained matrix, comprising 90 per cent of the rock, is mostly sanidine microlites accompanied by some plagioclase and biotite, interstitial magnetite grains, and accessory quartz.

A second, somewhat smaller dyke is located midway between the Enterprise portal and Enterprise shaft. This is a darker rock with fewer and smaller phenocrysts. Microscopically, this variety of pulaskite consists of a scattering of distinctive anorthoclase glomerophenocrysts, with plaid twinning, and small subhedral biotite and pyroxene crystals free-floating in a fine-grained matrix of randomly oriented sanidine and biotite laths with interstitial pyroxene and magnetite grains. A chemical analysis of this rock bears marked similarity to Daly's average pulaskite having slightly more alumina and alkalies and lower silica than the coarse porphyry dyke (*see* Nos. 2, 3, and 4 in the accompany table). The rock is quartz-free and contains a minor amount of normative nepheline.

Lamprophyres are perhaps the least important but petrographically most distinctive dykes. Like the pulaskite intrusions, the lamprophyres are of probable Early Tertiary age, and cut all other major geological units on the property.

The freshest example seen is a dark, micaceous variety intersecting Colt's underground workings 280 feet northwest of the Denero Grande shaft (Fig. 8). Thin section examination of this rock shows the following composition:

	Per Cent
Biotite	36.5
Pyroxene	36.3
Feldspar	16.8
Amphibole	2.4
Calcite	3.2
Magnetite	2.8
Apatite	2.0

The rock consists of a framework of interlocking biotite and augite subhedra with interstitial feldspar, both alkali feldspar and plagioclase, and some calcite. The amphibole is a brown pleochroic variety usually accompanying the biotite. Magnetite and apatite are accessories, generally occurring as poikilitic inclusions in the other minerals. Conversion of the modal composition above to oxides gives a result similar to the actual chemistry of this rock and Daly's average alnoite (*see* Nos. 9 and 10 in the accompanying table). The large amount of olivine and nepheline calculated in the norm is the result of marked silica undersaturation of this rock resulting primarily from the abundance of biotite.

THE DENTONIA VEIN: The Dentonia quartz vein is exposed over a length of approximately 6,000 feet and can be traced from a point 1,500 feet north of the Ethiopia adit and south a distance of about 4,500 feet to the extremity of the Colt workings. Essentially it follows a fracture zone which strikes southerly across the trend of the metamorphic rocks.

Previous Mine Development: Previous development work centred on two areas of the vein referred to as the Jewel and Enterprise sections. The combined length of these sections is approximately 2,400 feet. It is estimated that the total excavation amounted to about 165,000 tons which included stopes, raises, and about 9,700 feet of drifts and crosscuts on five levels, the vein being followed to a maximum depth of about 500 feet.

The Jewel section, which was mined out in the earliest days, comprises slightly less than half the total development. Drifts and stopes extend from the north boundary of the Denero Grande claim to several hundred feet north of the Jewel shaft. Much of the ore was taken from a thickened part of the vein where it traverses the contact between the granodiorite and schistose volcanic rocks.

The Enterprise section was developed mainly by Dentonia Mines, Limited, from 1931 to 1948, the main orebody lying between the White and Enterprise shafts. This was the largest single orebody in the mine with a length of more than 400 feet, averaging 6.5 feet in width and ranging to as much as 16 feet wide.

The Rowe ore shoot, located midway between the Jewel and the main Enterprise workings, was comparatively small and high grade. Here the mine operation was apparently hampered by a coarse feldspar porphyry dyke which followed, displaced, and eventually cut the vein.

Similarly, the Anchor shoot was small and somewhat detached from the main Enterprise orebody. This working is near the northern limits of the old mine at the contact between greenstone and quartzite formations.

In summary, intermittent work between 1900 and 1948, resulted in about 135,000 tons of ore averaging 0.30 ounce per ton gold and 1.7 ounces per ton silver. Most of this ore was derived from the Jewel and main Enterprise zones, with important subsidiary tonnage from the Anchor and Rowe shoots.

Ore controls are attributed to several factors, the most important of which are deflections in the vein attitude and the response of the main fissure zone to sudden changes in the composition of the host rock. Both of these features are present in the Jewel orebody. Here the vein is enlarged and somewhat refracted at the intersection of brittle granodiorite and the less competent schistose volcanic rocks. A major deflection in the strike of the vein is not so apparent in the case of the Anchor shoot at the greenstone-quartzite contact although the vein is generally less steeply inclined. The great width of quartz in the main part of the Enterprise section appears to be solely the result of a major variation in the direction of the fissure zone caused by stresses acting on rather homogeneous greenstone.

The Colt Operation: The continuation of the Dentonia vein south of the Jewel workings was proven in 1938 when a diamond-drill hole 300 feet to the south, collared in thick overburden, returned an assay of 0.27 ounce per ton gold on a 2-foot intersection of quartz. Owing to divided ownership of the Denero Grande claim, however, this discovery was not followed up until Colt Resources Ltd. acquired the property in 1973. Eight new drill holes in the same general area cut the vein, again yielding assays in the range 0.032 to 0.480 ounce per ton gold and 0.24 to 2.88 ounces per ton silver, over an average width of 3.1 feet. These results encouraged Colt Resources Ltd. to undertake underground exploration with a view to production.

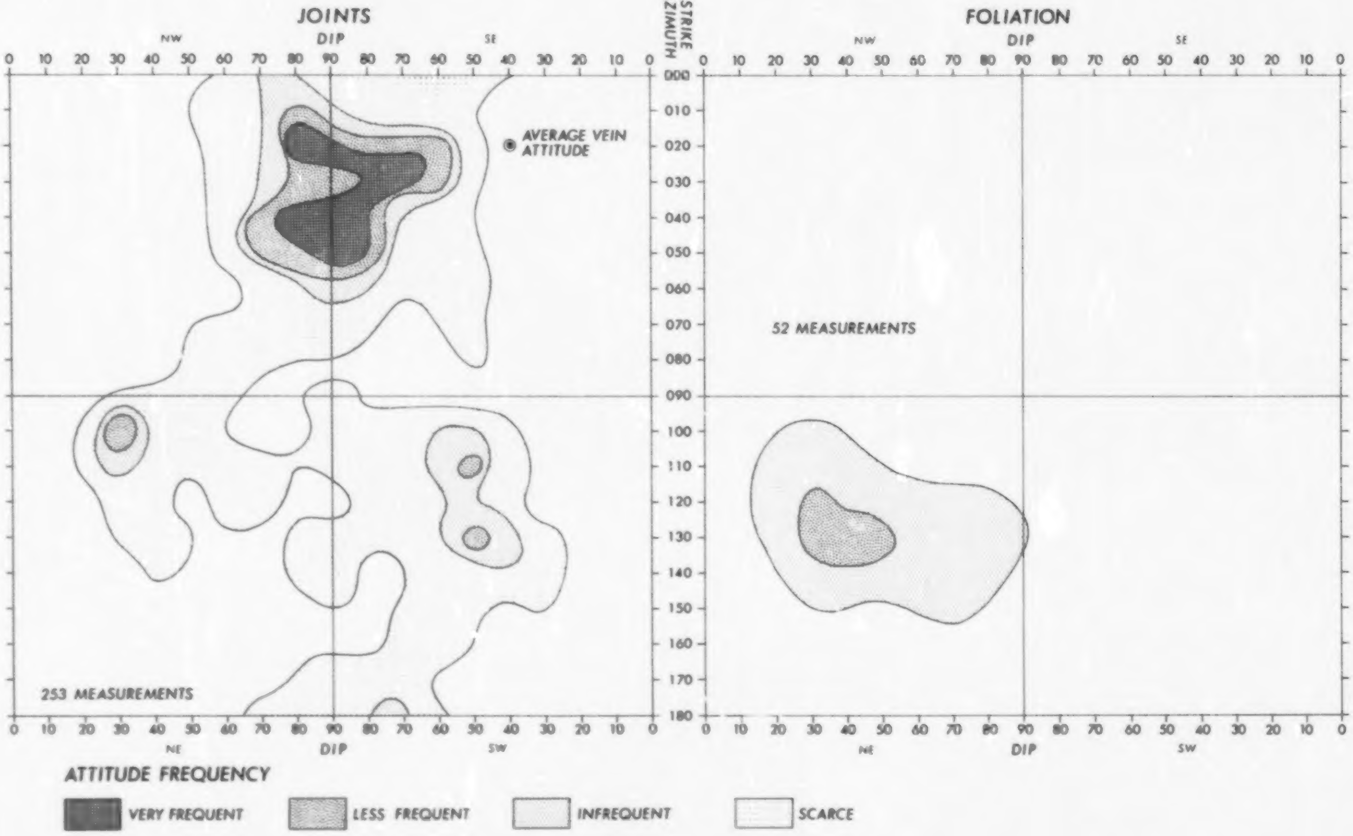


Figure 9. Fracture orientation, Jewel Lake area.

The progress to June 21st in the new development is shown on Figure 8. By January, the Denero Grande shaft was completed to a depth of 290 feet. A crosscut was then driven northwest on the 250 level to the vein, a distance of 230 feet from the shaft. Following the vein north a good ore shoot was discovered almost immediately. According to company reports, assays returned on a 100-foot length of the vein averaged 0.30 ounce per ton gold and 1.60 ounces per ton silver, across 3.4 feet. While stoping commenced here, a raise was driven to the 195 level from the end of the crosscut. The vein was intersected at this point and drifted onto the southwest, exposing an enlarged segment of solid quartz 7.5 feet thick.

Mineralization within the quartz includes mostly pyrite, galena, and chalcopyrite (Plate I). The presence of sphalerite, tellurides, and native gold has also been reported. These minerals are not especially abundant, occurring mainly as grey streaks, fine disseminations, or small pockets and lenses of coarser grains.

At a number of places dykes have entered the fissure system interrupting the vein and diluting potential ore zones. For example, in the southwest drift on the 250 level the vein has been obscured and even lost because of dyke intrusion.

Splays and screens of country rock, as well as postvein dykes, cause considerable dilution in some zones. Nevertheless, the silica content of the ore maintained during present mining averages 85 per cent.

The Origin and Age of the Vein: According to Hedley, 1941, the vein structure is the result of regional shearing stresses. Apparently, tensional gash fractures developed attendant to north-trending shears in response to compressional stress from the northeast, allowing the influx of quartz. The amount of movement was small and the direction is believed to have been largely horizontal.

The host rocks are not thought to have offered any special opportunity for chemical reaction with the ore-bearing solutions, however, there was a tendency for the greenstone to split and fray under stress, the walls of the vein and septa showing some evidence of replacement.

The vein ranges widely in attitude with strikes varying from 000 to 050 degrees, averaging about 020 degrees, and dipping between 30 and 60 degrees southeast. It is noteworthy that as dips increase the vein generally narrows, merging with steeply dipping joints and shears, also striking about 020 degrees, and a set of strong crossjoints at roughly 045/90 degrees, developed at right angles to the strike of the foliation of the local country rocks (Fig. 9).

The age of the Dentonia vein is bracketed by the granodiorite, which locally hosts the vein, and by crosscutting dykes. The dykes are correlated with petrographically similar Tertiary lavas at the summit of Mount Pelley and with volcanic rocks which occur to the west near Midway, dated at 49±2 m.y. by Mathews (1963). A sample of the granodiorite, taken from a point near the Denero Grande shaft on the 250-foot level of the Colt workings and analysed by Geochron Laboratories Ltd., returned a K-Ar age of 125±5 m.y.

WORK DONE:

During the year, 570 tons of ore was shipped to the smelter. These shipments contained 82 per cent silica, 170 ounces gold, and 1.066 ounces silver. This production was mainly from a stope located northeast of the crosscut between the 195 and 250 levels.

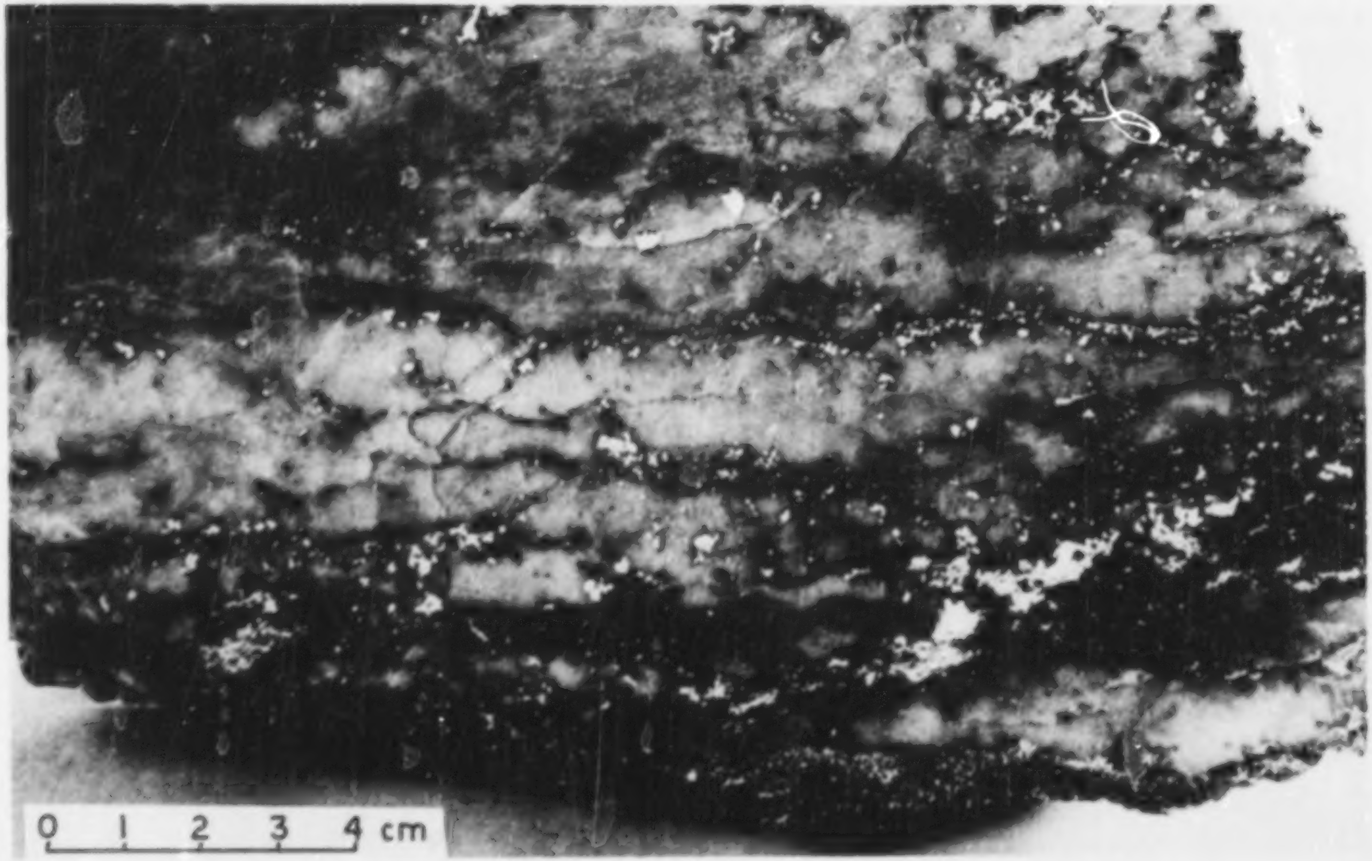


Plate I. Sample of the Jewel vein from the Colt workings – scattered sulphides in quartz; bright areas in reflected light are mainly pyrite and galena and minor chalcopyrite.

In development, 309 feet of crosscutting, 372 feet of drifting, 385 feet of subdrifting, and 689 feet of raising were completed mainly on the 195 and 250 levels.

Three stopes were prepared for production and 1,500 tons of ore was stockpiled on surface.

The Denero Grande shaft was completed at a depth of 290 feet below surface.

During the year, 544 feet of AQ drilling was done on the 250 level in six holes.

In late summer, a production hoistroom was built and the headframe extended a further 35 feet.

REFERENCES: Brock, R. W. (1905), *Geol. Surv., Canada,* Map 828; Hedley, M. S. (1941), *B.C. Dept. of Mines & Pet. Res.,* unpublished report, 40 pp.; Hedley, M. S. and Watson, K. DeP. (1945), *B.C. Dept. of Mines & Pet. Res.,* Bull. 20, Pt. III, pp. 11, 12; Mathews, W. H. (1963), Report 2, Dept. of Geology, *U.B.C.*; Monger, J.W.H. (1967), *Geol. Surv., Canada,* Paper 67-42; *Minister of Mines, B.C.,* Ann. Rept., 1913, pp. 146-148; 1933, pp. 158-160; 1935, pp. D2-D5; 1936, pp. D23-D25; 1947, p. 155; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 41; Geological Fieldwork, 1974, pp. 56-58.

HOMESTAKE (82E/SW-119) (Fig. A, No. 15)

LOCATION: Lat. 49° 05' Long. 119° 08' (82E/3E)
GREENWOOD M.D. Fifteen and one-quarter miles east-northeast of Osoyoos, 3,000 feet west of the place where the natural gas pipeline crosses Rock Creek, at approximately 3,600 feet elevation.

CLAIMS: HOMESTAKE (Lot 1892), DAISY FR. (Lot 1881).

OWNER: M. K. LORIMER, 3082 West 27th Avenue, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite, pyrite, and pyrrhotite are associated with fine-grained quartz and calcite veinlets. Rock types on the Homestake claim are mainly greenstones and greywackes of the Anarchist Group. Conglomerates are exposed at the eastern end of the property. Plutonic rocks of the Nelson batholith are present to the immediate south.

WORK DONE: Linecutting and magnetometer survey, 3.3 line-miles, 200 by 200-foot grid spacing covering both claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 410 (BF, HB); Assessment Report 5249.

BALDY, RICE (82E/SW-118) (Fig. A, No. 14)

LOCATION: Lat. 49° 06' Long. 119° 10' (82E/3E)
GREENWOOD M.D. Fourteen and one-half miles east-northeast of Osoyoos, on Rice Creek, 1.5 miles above its confluence with McKinney Creek.

CLAIMS: BALDY 1 to 12, RICE 1 to 6.

(82E/3W)

OWNER: NEVEX MINES LTD. (formerly Montecito Minerals Ltd.), 1015, 470 Granville Street, Vancouver.

METALS: Gold, silver, copper.

DESCRIPTION: The claim group is underlain by Anarchist Group metasedimentary rocks which are in contact with granitic rocks.

WORK DONE: Magnetometer survey, 17 line-miles, 100 by 400-foot grid spacing and geochemical survey, 218 soil samples, 200 by 800-foot grid spacing, 8 line-miles covering all claims.

REFERENCE: Assessment Report 5408.

MERRY (Fig. A, No. 16)

LOCATION: Lat. 49° 02′ Long. 119° 23′ (82E/3W)
OSOYOOS M.D. Three miles east of Osoyoos, adjacent to the north side of Highway 3, extending west-northwest from Haynes Creek across Long Joe Creek, at approximately 3,000 feet elevation.

CLAIMS: MERRY 1 to 22.

OWNER: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

DESCRIPTION: Volcanic rocks of the Anarchist Group have been metamorphosed by intrusive rocks of the Nelson batholith.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 8.4 line-miles, 800 by 100-foot grid spacing; and geochemical soil survey, 244 samples, 800 by 100-foot grid spacing, 8.4 line-miles covering all claims.

NIKKI (82E/SW-125) (Fig. A, No. 98)

LOCATION: Lat. 49° 00′ Long. 119° 38′ (82E/4E)
OSOYOOS M.D. Seven and one-half miles west-southwest of Osoyoos, extending north three-quarters of a mile from the International Boundary.

CLAIMS: NIKKI 1 to 12.

OWNER: BONAVISTA MINING CORPORATION LTD., 315, 543 Granville Street, Vancouver.

METALS: Copper, lead, zinc, silver.

DESCRIPTION: Mineralization is contained in quartz veins in a granite-granodiorite complex.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer and electromagnetic survey, approximately 10 line-miles, 500-foot grid spacing; geochemical soil survey, 10 miles, 500-foot grid spacing covering all claims; partial road to claims constructed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 42.

HORN SILVER (82E/SW-2) (Fig. A, No. 19)

By David Smith

LOCATION: Lat. 49° 03′ Long. 119° 41′ (82E/4E)
OSOYOOS M.D. Ten miles west-northwest of Osoyoos, covering Richter Mountain from the Similkameen River road (Highway 3A) to Richter Creek.

CLAIMS: UTICA 1 to 100, 103 to 118, UTICA 2 to 5 Fractions, etc., AMY 1, AMY 1, 2, and 4 Fractions, BEN 2 to 6, PINES 5 to 10, 12, 13, etc., HORN SILVER (Lot 1928), SILVER BELL (Lot 2393), BRITISH (Lot 3064), totalling approximately 145.

OWNER: DANKOE MINES LTD., 2002, 1177 West Hastings Street, Vancouver; mine address, Box 190, Keremeos; W. K. Beach, general manager.

METALS: Silver, gold, copper (production shown on Table I).

DESCRIPTION: The ore occurs in a series of narrow, gently dipping quartz veins cutting syenite to diorite host rocks. Ore minerals, including argentite, tetrahedrite, pyrargyrite, cerargyrite, galena, sphalerite, pyrite, and chalcopyrite, occur as irregular concentrations and bands within the vein system.

WORK DONE:

Previously the mine was developed by drifts and crosscuts on three principal levels. Room and pillar slusher stopes were developed either directly from the drifts or by short access raises to the veins. Mining was done exclusively by slusher stopes with drilling by Jackleg drills.

In 1974 the mine adopted trackless mining in conjunction with conventional track haulage. Because of the added diesel equipment, two scooptrams, the ventilation was increased to meet the requirements of the environmental inspector. Development work consisted of diamond drilling, 12,449 feet; subdrifting, 3,583 feet; drifting, 1,416 feet; and raising, 465 feet.

Work on the tailings impoundment dyke was completed. The dam will accommodate production for the years 1974 to 1976.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 394; 1973, p. 43; Assessment Report 5293.

SUSIE (82E/SW-90) (Fig. A, No. 97)

By David Smith

LOCATION: Lat. 49° 13′ Long. 119° 36′ (82E/4E)
OSOYOOS M.D. Three miles northwest of Oliver, extending southwest from Victoria Creek to Sawmill Creek, at approximately 1,900 feet elevation.

CLAIMS: SUSIE (Lot 1917) plus six other claims comprising GREY GABLES, AGRICOLA, TRES HERMANOS, OAKVILLE, FEDERAL, BANKER (Lots 2026 to 2031).

OWNER: Fairview Mining Company Ltd.

OPERATOR: HEM MINES LTD., Box 855, Oliver; Harold Hemmerick, manager.

METALS: Silica, silver, gold, copper, lead, zinc (production shown on Table 6).

(82E/4E)

DESCRIPTION: Cretaceous granite of the Nelson batholith contains quartz veins carrying pyrite, galena, chalcopyrite, and sphalerite.

WORK DONE: At this underground operation, mining was done by open stoping and the ore slushed to a loading point where it was transferred by an Eimco loader to a 1-ton car. The ore was then hoisted to the surface and trucked to Oliver for rail shipment to the Trail smelter.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1964, p. 109; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 43, 44.

JUNE (Fig. A, No. 17)

LOCATION: Lat. 49° 14' Long. 119° 37' (82E/4E)
OSOYOOS M.D. Four miles northwest of Oliver, extending south from Victoria Creek, at approximately 2,800 feet elevation.

CLAIMS: JUNE 1 to 10.

OWNER: GREEN BLUFF COPPER MINES LTD., 1703, 1177 West Hastings Street, Vancouver.

DESCRIPTION: The claims are mainly underlain by coarsely porphyritic Valhalla granitic rock. Inclusions of hornblendite occur in the east part of the claim area, and fine to medium-grained Nelson granodiorite occurs along the south boundary.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; linecutting, 8.4 miles of grid covering all claims.

REFERENCE: Assessment Report 4974.

GIL (82E/SW-122) (Fig. A, No. 18)

LOCATION: Lat. 49° 08' Long. 119° 56' (82E/4W)
OSOYOOS M.D. Seven and one-quarter miles southwest of Keremeos, extending south from Gillanders Creek near its head, between 4,600 and 7,800 feet elevation.

CLAIMS: GIL 1 to 26.

OWNER: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Molybdenum, copper.

DESCRIPTION: The Gil claims are underlain by volcanic rocks, cherts, felsic porphyry dykes, aplites, and pegmatites.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 18 line-miles, 100 by 800-foot grid spacing; geochemical survey, 361 soil, 91 rock, and 20 stream silt samples, 200 by 800-foot grid spacing, 18 line-miles; and linecutting covering all claims.

RENO (82E/SW-123) (Fig. A, No. 22)

LOCATION: Lat. 49° 20′ Long. 119° 48′ (82E/5W)
OSOYOOS M.D. Eight and three-quarter miles north of Keremeos, extending northwest from Marsel Creek, approximately 1.5 miles north of its confluence with Keremeos Creek.

CLAIMS: RENO 1 to 9.

OWNER: ALBERT FALKENSTEIN, Box 4, Keremeos.

METALS: Gold, silver, niobium ?.

WORK DONE: 1973 and 1974 – blasting, four test holes and surface diamond drilling, two holes totalling 120 feet on Reno 3, 4, 7.

REFERENCE: Assessment Report 5005.

DIVIDEND (82E/SW-124) (Fig. A, No. 23)

LOCATION: Lat. 49° 22′ Long. 119° 52′ (82E/5W)
OSOYOOS M.D. Eleven miles north of Keremeos, covering Dividend Mountain between Keremeos and South Keremeos Creeks.

CLAIMS: JO 3 and 4, KIM 1 to 6 (5 and 6 now forfeited), SEL 1 to 42 (33, 35, 37 now forfeited).

OWNER: SOUTHCAN MINING LIMITED, 600, 900 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Irregular skarn-type deposits, carrying pyrrhotite, magnetite, and copper sulphides, occur on the claims. These occurrences often lie close to the contact of dykes and/or larger intrusive bodies with limy metasedimentary rocks of the Triassic Independence Formation.

WORK DONE: Airborne magnetometer survey, 50 line-miles covering Joe 3, 4, Kim 1-6, Sel 1-33, 35, 38-42.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1901, p. 1158; 1906, p. 168; Assessment Report 5199.

PATRICIA (82E/SW-107) (Fig. A, No. 20)

LOCATION· Lat. 49° 23′ Long. 119° 57′ (82E/5W)
OSOYOOS M.D. Seventeen miles south-southwest of Penticton, extending from Mount Riordan to the south tip of Nickel Plate Lake, between 6,100 and 6,500 feet elevation.

CLAIMS: PATRICIA 3 to 12.

OWNER: CORVAL RESOURCES LTD., 420, 475 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization consists of scattered chalcopyrite and pyrrhotite in a skarn zone. Some areas have considerable pyrite as well. Upper Triassic Nicola Group volcanic rocks and a probable granodiorite intrusion occur in two areas on the claims.

WORK DONE: Trenching, 52 feet on Patricia 6.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 40.

DUSTY MAC (82E/SW-78) (Fig. A, No. 21)

LOCATION: Lat. 49° 21′ Long. 119° 33′ (82E/5E)
OSOYOOS M.D. Extending east from the settlement of Okanagan Falls and lying within the triangle formed by the lower east side of Skaha Lake, McLean Creek, and Shuttleworth Creek, at approximately 1,550 feet elevation.

CLAIMS: AU 1 to 11 Fractions, JG 2 to 5, 7 to 14, AT LAST Fraction, JWKS Fraction, CLAIRE 1 Fraction, J GUS 1 to 7, JOE 1, GUS 1 to 4, KEN 1 to 6, 8, NOB 1, 5, 7, 9, 11, HUNT 7 and 22 Fractions, MOR 1 to 4, 9 to 20, JR 1 to 27.

OWNER: DUSTY MAC MINES LTD., 433, 355 Burrard Street, Vancouver V6C 2G8.

METALS: Gold, silver.

DESCRIPTION: The claims are underlain by light-coloured pyroclastic rocks, thick lahar deposits of feldspathic andesite, minor andesitic lavas, and some sandstone and carbonaceous shales of Tertiary age.

WORK DONE: Geochemical soil survey, 25 samples, 50-foot centres, one-half line-mile on Claire 1 Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 402-406; Church, B. N., 1973, *B.C. Dept. of Mines & Pet. Res.*, Bull. 61, pp. 89-92; Assessment Report 5205.

AU (82E/SW-112) (Fig. A, No. 25)

LOCATION: Lat. 49° 17′ Long. 119° 18′ (82E/6W)
OSOYOOS M.D. Twelve and three-quarter miles east-southeast of Okanagan Falls, on Fish Creek, 2.25 miles upstream from its confluence with Vaseux Creek, at approximately 4,600 feet elevation.

CLAIMS: AU 1 to 6, RAIN 1 and 2.

OWNERS: K. G. Thompson and R. W. McLean.

OPERATOR: TECK CORPORATION LTD., 700, 1199 West Hastings Street, Vancouver.

METALS: Gold, silver.

DESCRIPTION: Tertiary andesite porphyry is traversed by a northeast-trending rusty shear zone, 100 feet wide, containing patches and bands of silicified rock and bands and veinlets of calcite. Sparse, very fine-grained pyrite also occurs.

WORK DONE: Geochemical soil survey, 286 samples taken at 50 by 200-foot grid spacing covering AU 1-6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 47; Assessment Report 5009.

XMAS (Fig. A, No. 24)

LOCATION: Lat. 49° 25′ Long. 119° 24′ (82E/6W)
OSOYOOS M.D. Nine miles southeast of Penticton, extending down the north slope of Mount Christie to South Ellis Creek, at approximately 5,000 feet elevation.

CLAIMS: XMAS 1 to 14, 21 to 58.

OWNER: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

DESCRIPTION: The claims are underlain by granitic rocks of the Nelson batholith.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Xmas 21-58; magnetometer survey, 19 line-miles, 800 by 100-foot grid spacing covering Xmas 41-58; geochemical soil survey, 464 samples, 800 by 200-foot grid spacing, 19 line-miles covering Xmas 21-58.

SCANDIE (82E/SW-71) (Fig. A, No. 34)

LOCATION: Lat. 49° 24′ Long. 119° 04′ (82E/6E)
GREENWOOD M.D. Two and one-half miles south of Beaverdell, extending south from Laporte Creek, 1 mile upstream from its confluence with the West Kettle River.

CLAIMS: JOHN 1, JAY 1 to 7, 18 to 21.

OWNER: Spectrum Industrial Resources Ltd.

OPERATOR: NORDIC MANAGEMENT & DEVELOPMENT LTD., 8167 Main Street, Vancouver.

METALS: Lead, zinc, silver.

DESCRIPTION: A lead-zinc-silver vein occurs in a shear zone.

WORK DONE: Surface geological mapping covering all claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1917, p. 205; 1960, p. 63.

HIGHLAND BELL MINE (82E/SW-30, 39, 40, 68, 69, 73) (Fig. A, No. 99)

By David Smith

LOCATION: Lat. 49° 26′ Long. 119° 04′ (82E/6E)
GREENWOOD M.D. Approximately 1.33 miles east of the town of Beaverdell, at the head of Wallace Creek, on the west slope of Mount Wallace. The property is serviced by several private mining roads from Beaverdell.

CLAIMS: TARTAN, CLANSMAN, OREGON, MONTANA, WYOMING, WASS 1 Fraction, WALLACE 1 to 8 plus 33 Crown-granted claims including SALLY, ROB ROY (Lots 2092, 2093), HIGHLAND LASS, BEAVER, BELL (Lots 2341 to 2343).

OWNER: TECK CORPORATION LTD., 700, 1199 West Hastings Street, Vancouver; mine office, Beaverdell; G. Goetting, mine manager.

METALS: Silver, lead, zinc, gold, cadmium (production shown on Table 6).

DESCRIPTION:

The detailed geology of this property may be found in the Annual Report of the Minister of Mines for 1949. In summary, the occurrence may be described as highly faulted, moderate to steeply southward-dipping quartz veins and stringer lodes striking east to northeasterly in zones of altered granodiorite or sodic granite, part of a stock which intrudes the Westkettle batholith, west of the summit of Mount Wallace. The quartz veins are mineralized with pyrite, sphalerite, and galena with small amounts of silver. Parts of the veins contain ore shoots consisting of silver minerals including tetrahedrite, pyrargyrite, polybasite, argentite, and native silver.

WORK DONE:

Mining is done by open stope methods using Jackleg drills and small air-powered slushers. Production, which amounts to about 100 tons per day, is hauled by trains to surface bins and then by truck to the mill in Beaverdell. Exploration was limited to diamond drilling only, with this work directed mainly toward finding extensions of known ore zones. Production was chiefly from old stopes, dumps, and tailings. At the concentrator, the ore is crushed, hand sorted, and finally concentrated by selective flotation, producing lead and zinc concentrates. Tailings are deposited adjacent to the mill on river flats.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1949, pp. 138-148; Reinecke, L., 1915, Ore Deposits of the Beaverdell Map-area, *Geol. Surv., Canada,* Mem. 79; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 385; 1972, p. 43; 1973, p. 48.

MAYFLOWER (82E/SE-168) (Fig. A, No. 71)

LOCATION: Lat. 49° 27' Long. 118° 53' (82E/7W)
GREENWOOD M.D. Twenty-five miles north-northwest of Greenwood, on the east slope of Lake Ridge, between Fourth of July and Wasmes Creeks, at approximately 4,000 feet elevation.

CLAIMS: MAYFLOWER (Lot 1284), LILLIE MAY (Lot 1285), 7:30 (Lot 1459), FOURTH OF JULY (Lot 2638), plus BGA 3 to 6.

OWNER: BLACK GOLD RESOURCES (1973) LTD., Third Floor, 605 Seventh Street SW., Calgary, Alta.

METALS: Gold, silver, copper.

DESCRIPTION: Chalcopyrite and pyrrhotite and associated gold and silver values occur in northeast-trending veins in andesite intruded by granites and syenites of the Nelson batholith.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 397 (Guts, Crick).

WEWA (82E/SE-167) (Fig. A, No. 13)

LOCATION: Lat. 49° 17' Long. 118° 00' (82E/8E; 82F/5W)
TRAIL CREEK M.D. Twenty-six miles northeast of Grand Forks, surrounding the headwaters of Big Sheep Creek, at approximately 5,000 feet elevation.

(82E/8E)

CLAIMS: WEWA 6, 8, 27, 29, RAM 1 to 5, 7, 9 to 26, 28, 30 to 60.

OWNERS: H. Veerman and B. Botel.

OPERATOR: BRASCAN RESOURCES LIMITED, 502, 1155 West Pender Street, Vancouver.

METALS: Molybdenum, copper, fluorspar.

DESCRIPTION: Ram 23 to 30 and the Wewa claims are mainly underlain by propylitized monzonite intruded by a diorite stock and by dykes of diorite, andesite, and felsite porphyry. Fluorite occurs in minor fault breccia on Ram 10, Wewa 29, and Ram 30, accompanied by minor chalcopyrite on Wewa 29. A molybdenite-bearing quartz vein cuts felsite porphyry on Ram 9.

WORK DONE: Linecutting, 28 miles of grid; surface geological mapping, 1 inch equals 800 feet; magnetometer survey, 17 line-miles, 200 by 400-foot grid spacing; geochemical survey, 635 soil samples taken at 200 by 400-foot grid spacing and 80 silt samples taken from creek at 500-foot intervals covering Ram 4, 10, 12, 23-26, 28, 30-32, 35-41, 43-52 and Wewa 6, 8, 27, 29.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 44; Assessment Report 5326.

MIDAS (DEER, PARK) (82E/SE-162) (Fig. A, No. 12)

LOCATION: Lat. 49° 20′ Long. 118° 03′ (82E/8E)
TRAIL CREEK M.D. Twenty-seven and one-half miles northeast of Grand Forks, on the southwest slope of Mount Shields, at the headwaters of Shields Grass, Pup, and Quinn Creeks, at approximately 5,000 feet elevation.

CLAIMS: PARK 6 to 12, 14 to 24, PARK Fraction, PARK 5 Fraction, DEER 11 to 20, 27 to 29, 31, 33 to 40, DEER Fraction, CAMEL 1 to 42.

OWNERS: H. Veerman and B. Botel.

OPERATOR: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METALS: Molybdenum, copper.

DESCRIPTION:

Coryell syenite and monzonite and aphanitic feldspar porphyry are intruded by a swarm of northwest-striking dykes of feldspar biotite porphyry, syenite porphyry, and andesite. Breccia zones trend eastward through the centre of the claim area, disrupting the dykes but also being cut by them. These zones are more or less surrounded by a stockwork of quartz and magnetite, which diminishes away from the breccia. Pyrite forms a weak halo. Molybdenite occurs at two places in breccia, in a chlorite-magnetite vein and in a quartz vein in a quartz monzonite phase of the syenite, as well as dissemimated in a finer grained phase of the syenite near the southwest corner of the mapped area. Chalcopyrite, and rarely sphalerite and scheelite, are also associated with the breccia zones.

WORK DONE: Linecutting, 24 miles of grid; surface geological mapping, 1 inch equals 200 feet; magnetometer survey, 22.5 line-miles, 100-foot grid spacing; and geochemical survey, 639 soil samples and 43 rock chip samples,

(82E/9W)

200-foot grid spacing, 22.5 line-miles covering Deer 11, 12, 16, 27, 29, 35, 36, Park 5-8, and Camel 15-20, 25, 26, 36, 38; road construction, 0.6 mile on Deer 27, 29, 34 and Camel 1 (between access road and drill sites); surface diamond drilling, five holes totalling 2,890 feet on Camel 1 and Deer 28, 29, 31.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 49, *B.C. Dept. of Mines & Pet. Res.*, Bull. 9, 1940, pp. 16-18; Assessment Reports 5101, 5196, 5197.

JIMMY (82E/NE-42) (Fig. A, No. 26)

LOCATION: Lat. 49° 34′ Long. 118° 23′ (82E/9W)
GREENWOOD M.D. Forty-three and one-quarter miles north of Grand Forks, on the west side of Mount Franklin, 1,000 feet east of Franklin Creek, at approximately 3,300 feet elevation.

CLAIM: JIMMY.

OWNER: J. J. McDougall.

OPERATOR: FALCONBRIDGE NICKEL MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METALS: Silver, lead, zinc.

DESCRIPTION: Galena and sphalerite occur sporadically in steeply dipping limestone lenses in the Franklin Group.

WORK DONE: Geochemical soil survey, 68 samples taken at 25 by 100-foot grid spacing on Jimmy claim.

REFERENCE: Assessment Report 5080.

DOE, IVY (82E/NW-36) (Fig. A, No. 32)

LOCATION: Lat. 49° 31′ Long. 119° 10′ (82E/11E)
GREENWOOD M.D. Eighteen miles east of Penticton, extending south from the north side of Wilkinson Creek east of Saunier Creek, to within about 2 miles of Carmi, at approximately 4,000 feet elevation.

CLAIMS: IVY, IVY O, MARY O, CAPCO, LINDA, WILK, HUCK, LANG, MY, TOM, DOE, totalling approximately 176.

OWNERS: Vestor Explorations Ltd. and Kennco Explorations, (Western) Limited.

OPERATORS: VESTOR EXPLORATIONS LTD., 1502, 11111 – 87th Avenue, Edmonton, Alta. T6G 0X9 and GRANBY MINING CORPORATION, 17th Floor, 1050 West Pender Street, Vancouver V6E 2H7.

METALS: Molybdenum, minor uranium, silver, gold, copper.

DESCRIPTION:

Molybdenite occurs in a gneissic granodiorite breccia. Most of the molybdenite in the E zone is disseminated throughout the breccia fragments as well-developed rosettes. The breccia consists of very angular fragments of granodiorite gneiss. There is considerable rotation between fragments and the matrix consists primarily of quartz or quartz feldspar. Minor amounts of molybdenite, pyrite, and chalcopyrite occur in the matrix.

Uraninite occurs somewhat sporadically, principally as small grains disseminated through the granodiorite. Uraninite is always accompanied by purple fluorite.

WORK DONE: Vestor Explorations Ltd. – geochemical soil survey, 617 samples, approximately 200-foot grid spacing covering Lang 1, 2, Ivy 1-3, 6, Huck 1, Linda 4, Wilk 3, 4, Mary O 16; surface diamond drilling, 17 holes totalling 5,653 feet on Doe 1-4, Linda 4, Ivy 6, 7, and Mary O 16; percussion drilling, eight holes totalling 2,000 feet on Doe 1-4, Lang 2; surface workings surveyed; road construction, approximately 2 miles on Huck 2, Linda 4, 5, Lang 2, Mary O 16, and Ivy 6; trenching on Doe 1-4, Linda 3-5, Huck 2, and Mary O 16; Granby Mining Corporation – percussion drilling, 32 holes totalling 12,025 feet on Linda 3, 4, 5; road construction, 4 miles on Doe 1-4 and Linda 3-4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 50 (Ivy, Capco, May); Assessment Reports 5203, 5204.

X (82E/NW-14) (Fig. A, No. 36)

LOCATION: Lat. 49° 39′ Long. 119° 58′ (82E/12W)
OSOYOOS M.D. Thirteen miles west-northwest of Summerland, three-quarters of a mile south-southwest of Trout Creek at the Canadian Pacific Railway flagstop of Kirton.

CLAIMS: ARNIE 4 to 7, JOHN 1 to 3, 8, COL 1 to 30.

OWNERS: Canadian Occidental Petroleum Ltd. and Cro-Mur Mining and Exploration Co. Ltd.

OPERATOR: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METAL: Copper.

DESCRIPTION: The claims are underlain by granodiorite and aplite-pegmatite dykes. Chalcopyrite, bornite, and pyrite occur as disseminations.

WORK DONE: Linecutting and IP survey, 15 line-miles, 200 by 400-foot grid spacing covering Arnie 4-7, John 1-3, 8, Col 1-9; surface diamond drilling, three holes totalling approximately 1,000 feet on Arnie 4, 5 and Col 3.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 187; Assessment Report 984.

JASS (82E/NW-21) (Fig. A, No. 35)

LOCATION: Lat. 49° 44′ Long. 119° 56′ (82E/12W)
OSOYOOS M.D. Thirteen and one-half miles northwest of Summerland, extending north and west from the north end of Munro Lake, between 5,200 and 5,600 feet elevation.

CLAIMS: MUN 1 to 36.

OWNER: Canadian Occidental Petroleum Ltd., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Molybdenum, copper, zinc.

(82E/13E)

DESCRIPTION: The claims are underlain by foliated, porphyritic granodiorite, intruded by dykes of quartz latite porphyry and quartz monzonite. Two sets of fracture systems contain quartz, minor feldspar, and quartz-sericite with minor chalcopyrite and molybdenite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Mun 1-30, ground magnetometer survey, 38.7 line-miles, 100 by 400-foot grid spacing covering Mun 1-30; geochemical survey, 911 soil samples and 72 rock chip samples (covering Mun 1-30) and 112 stream silt samples (covering Mun 1-36), 200 by 400-foot grid spacing, 38.7 line-miles; surface diamond drilling, three holes totalling approximately 900 feet on Mun 10, 11, and 17; linecutting covering Mun 1-30.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, pp. 213, 214; Assessment Report 5318.

BLUE HAWK (82E/NW-2) (Fig. A, No. 102)

LOCATION: Lat. 49° 59' Long. 119° 31' (82E/13E)
VERNON M.D. Six miles north of Kelowna, on Jennie Creek near its head, extending north to Wilson Gulch, at approximately 3,000 feet elevation.

CLAIMS: HILL 1 to 6, RJ 1 to 4, BLUE 1 and 2.

OWNER: DAWOOD MINES LIMITED, Box 1499, Merritt V0K 2B0.

METALS: Copper, silver, gold, lead.

DESCRIPTION: Chalcopyrite, pyrite, pyrrhotite, arsenopyrite, sphalerite, and galena occur in scattered veins of shattered, vitreous quartz.

WORK DONE: Surface geological mapping, 2 centimetres equals 400 feet covering RJ 1, 2 and Hill 3, 4; geochemical soil survey, 133 samples, 400-foot grid spacing covering same claims; trenching, 14,875 square feet on Hill 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 46; Assessment Report 5303.

SIL (82E/NW-49) (Fig. A, No. 40)

LOCATION: Lat. 49° 50' Long. 119° 51' (82E/13W)
OSOYOOS M.D. Six miles northwest of Peachland, 1,000 feet north of Silver Lake, at the headwaters of Silver Creek, between 3,500 and 4,400 feet elevation.

CLAIMS: SIL 1 to 20.

OWNER: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Copper, molybdenum, zinc.

DESCRIPTION: A pendant of felsic volcanic rocks and coarse and fine-grained pyroclastic rocks lies between two granodiorite batholiths. Massive pyrite-pyrrhotite predates the granodiorite, and disseminations and fracture fillings of pyrite-chalcopyrite-molybdenite occur in contact skarn rocks.

(82E/13W)

WORK DONE: Surface workings surveyed; linecutting; surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 22 line-miles, 100 by 400-foot grid spacing; and geochemical survey, 645 soil samples, 72 rock chip samples, and 103 stream silt samples, 200 by 400-foot grid spacing, 22 line-miles covering all claims.

REFERENCE: Assessment Report 5319.

PAN (82E/NW-3, 8 ?) (Fig. A, No. 38)

LOCATION: Lat. 49° 55′ Long. 119° 58′ (82E/13W)
OSOYOOS M.D. Fourteen miles northwest of Peachland, on Trepanier Creek, approximately 1.5 miles downstream from its head, between 3,500 and 5,600 feet elevation.

CLAIMS: PAN 1 to 22.

OWNER: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, molybdenite, and pyrite occur as fracture fillings in granodiorite.

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 400 feet; and geochemical survey, 589 soil samples, 115 rock chip samples, and 105 stream silt samples, 200 and 800 by 400-foot grid spacing, 27 line-miles covering all claims; ground magnetometer survey, 9.1 line-miles, 100 by 400-foot grid spacing covering Pan 2, 3, 5, 6, 8, 9, 13, 14, 18, 19, 21, 22.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 291 (Dan); 1970, p. 391 (Tee, Lite, Bern); 1971, p. 288 (North Brenda).

COLD (82E/NW-8 ?) (Fig. A, No. 37)

LOCATION: Lat. 49° 56′ Long. 119° 58′ (82E/13W)
NICOLA and OSOYOOS M.D. Fourteen and one-half miles northwest of Peachland, on the west slope of Mount Gottfriedsen, covering the headwaters of a northerly flowing creek, at approximately 5,200 feet elevation.

CLAIMS: COLD 1 to 18.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver.

DESCRIPTION: The claims are underlain by a relatively uniform, medium-grained, mafic-rich quartz diorite. In all exposures the rock is unaltered and relatively unfractured.

WORK DONE: Geochemical soil survey, 57 samples, 800-foot grid spacing, 1.8 line-miles covering Cold 5-8, 13-16.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1967, p. 211 (Jo); *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 291 (Dan).

TRE (82E/NW-3, 8 ?) (Fig. A, No. 39)

LOCATION: Lat. 49° 56′ Long. 119° 59′ (82E/13W)
OSOYOOS and NICOLA M.D. Fifteen miles northwest of Peachland, covering the headwaters of Trepanier Creek, between 4,400 and 5,200 feet elevation.

CLAIMS: TRE 1 to 18.

OWNER: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, molybdenite, and pyrite occur as fracture fillings in granodiorite.

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 400 feet; geochemical survey, 198 soil samples, 39 rock chip samples, and 24 stream silt samples, 200 by 400-foot grid spacing, 8 line-miles covering Tre 1-8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 291 (Dan); 1970, p. 39 (Tee, Lite, Bern); 1971, p. 288 (North Brenda).

ALFY, BEAR (82L/SW-5, 9; 82E/NW-7) (Fig. A, No. 79)

LOCATION: Lat. 50° 00′ Long. 119° 46′ (82L/4W; 82E/13W)
Report on this property in section 82L/4W.

PB (Fig. A, No. 33)

LOCATION: Lat. 49° 49′ Long. 119° 12′ (82E/14E, 11E)
49° 46′ 119° 08′
GREENWOOD, VERNON, and OSOYOOS M.D. Two groups of claims: 17.5 miles east-southeast of Kelowna, covering Kallis Creek from its head to its confluence with Hermon Creek and 13.5 miles east-southeast of Kelowna, covering Browne and Fish Lakes and the headwaters of Grouse Creek.

CLAIMS: PB 81 to 214, 217 to 249.

OWNER: Nissho-Iwai Canada Ltd.

OPERATOR: POWER REACTOR & NUCLEAR FUEL DEVELOPMENT CORP., 9-13, 1-chome, Akasaka, Minato-ku, Tokyo, Japan.

DESCRIPTION: The claims are underlain by Monashee Group rocks, Valhalla plutonic rocks, the Kettle River Formation, and Miocene plateau basalts and sedimentary rocks. Radioactive anomalies occur in sandstone, coaly sandstone, and conglomerate which underlie plateau basalts and overlie unconformably tuffaceous sedimentary rocks of the Oligocene (?) Kettle River Formation. No uranium mineralization was identified.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile covering all claims; surface diamond drilling, 20 holes totalling 3,333 feet on PB 141, 164, 165, 181, 182, 183, 185, 187, 193, 196, 227, 230, 236, and 238.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 52; Assessment Reports 5090, 5115.

AU, SILVER SPOT (82E/NE-25 to 27) (Fig. A, No. 30)

LOCATION: Lat. 49° 54′ Long. 118° 33′ (82E/15E)
VERNON M.D. One and three-quarter miles north-northwest of Lightning Peak, extending north from Waterloo Creek near its head, between 5,600 and 5,700 feet elevation.

CLAIMS: RHONDDA 1 and 2.

OWNER: K. L. DAUGHTRY, Box 795, Vernon.

METALS: Gold, silver.

DESCRIPTION: Gold-quartz veins are localized in northerly trending fault zones in a roof pendant of Upper Paleozoic to Lower Mesozoic metavolcanic flows, tuffs, and breccias of andesitic and limy composition, and metasedimentary crystalline limestone and argillite. All of these rocks have been invaded by dykes and small plugs related to enveloping granitic rocks of the Nelson batholith.

WORK DONE: Linecutting and ground magnetometer survey, 1 line-mile, 100 by 200-foot grid spacing covering Rhondda 1.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1925, p. 196; 1933, pp. 150, 152; *B.C. Dept. of Mines & Pet. Res.,* Bull. 1, 1932, pp. 81, 82; *Geol. Surv., Canada,* Sum. Rept., 1930, Pt. A, pp. 103, 105; Assessment Report 5200.

BS (82E/NE-44) (Fig. A, No. 28)

LOCATION: Lat. 49° 55′ Long. 118° 42′ (82E/15E)
VERNON M.D. Eight and one-quarter miles west-northwest of Lightning Peak, extending south from Stove Creek along the west side of the Kettle River.

CLAIMS: BS 1 to 19.

OWNERS: R. W. Yorke-Hardy and S. E. Arnold.

OPERATOR: R. W. YORKE-HARDY, Box 32, Mica Creek.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: The claims are underlain by granodiorite, quartz monzonite, and porphyritic granite of the Nelson batholith. These rocks are cut by some mafic dykes and by numerous quartz veins, many of which contain pyrite, galena, sphalerite, and minor chalcopyrite. Near the west bank of the Kettle River the rock is altered and contains finely disseminated pyrite.

WORK DONE: 1973 and 1974 – prospecting, mapping, and sampling on BS 1-12.

REFERENCE: Assessment Report 4979.

MORNING, DICTATOR (82E/NE-22, 23) (Fig. A, No. 29)

LOCATION: Lat. 49° 56′ Long. 118° 35′ (82E/15E)
VERNON M.D. Four and three-quarter miles north-northwest of Lightning Peak, 1.5 miles south of Winnifred Creek, 1,500 feet southwest of the head of Dictator Creek, between 5,600 and 5,700 feet elevation.

(82E/15E)

CLAIMS: MORNING 1 and 2.

OWNER: K. L. DAUGHTRY, Box 795, Vernon.

METALS: Gold, silver.

DESCRIPTION: Gold-quartz veins are localized in northerly trending fault zones in a roof pendant of Upper Paleozoic to Lower Mesozoic metavolcanic flows, tuffs, and breccias of andesitic and limy composition, and metasedimentary crystalline limestone and argillite. All of these rocks have been invaded by dykes and small plugs related to enveloping granitic rocks of the Nelson batholith.

WORK DONE: Linecutting and ground magnetometer survey, 1 line-mile, 100-foot grid spacing covering Morning 1 and 2.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1933, pp. 150, 152; 1966, p. 191; *Geol. Surv., Canada,* Sum. Rept., 1930, Pt. A, pp. 96, 97; Assessment Report 5200.

LOUMARK (82E/NE-43) (Fig. A, No. 27)

LOCATION: Lat. 49° 58' Long. 118° 40' (82E/15E)

VERNON M.D. Eight and three-quarter miles northwest of Lightning Peak, extending east from the west side of Bruer Creek to the east side of the Kettle River, 1,500 feet north of their confluence, at approximately 3,600 feet elevation.

CLAIMS: LOUMARK 1 to 10.

OWNER: WOODMAN ENTERPRISES LTD., RR 1, Glenmore Road, Winfield.

METALS: Gold, silver, silica.

DESCRIPTION: Gold and silver mineralization occurs in disseminated and streaky sulphides (pyrite, galena, chalcopyrite, arsenopyrite) in quartz veins cutting fractured Nelson granite.

WORK DONE: Underground geological mapping, 1 inch equals 10 feet; surface diamond drilling, three holes totalling 170 feet; trenching, 250 feet; underground work, 50 feet.

PAY DAY (82E/NE-37) (Fig. A, No. 31)

LOCATION: Lat. 49° 53.5' Long. 118° 29' (82E/16W)

VERNON M.D. Two and one-quarter miles east-northeast of Lightning Peak, immediately west of Rampalo Creek, between 6,000 and 6,200 feet elevation.

CLAIMS: PAY DAY 1 to 6.

OWNER: K. L. Daughtry.

OPERATOR: K. ROSS, Box 1297, Vernon.

METALS: Silver, copper, zinc, lead.

DESCRIPTION: Metamorphosed calcareous tuff of the Anarchist Group of Late Paleozoic to Mesozoic age is cut by several slips and shear zones and injected by many calcite veins and veinlets. Pyrite, sphalerite, chalcopyrite, and galena occur as disseminated grains, fracture fillings, stringers, blebs, and massive lenses in quartz-carbonate gangue in intensely altered, fractured, and faulted rocks.

(82F/3E)

WORK DONE: Surface geological mapping, 1 inch equals 50 feet and ground magnetometer and electromagnetic survey, 1.5 line-miles, 50-foot grid spacing covering Pay Day 1 and 2; surface diamond drilling, two holes totalling approximately 300 feet on Pay Day 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 53; *Geol. Surv., Canada*, Sum. Rept., 1930, Pt. A, pp. 114, 115.

NELSON 82F

HB MINE (82F/SW-4, 5) (Fig. A, No. 105) By J.B.C. Lang

LOCATION: Lat. 49° 09' Long. 117° 12' (82F/3E)
NELSON M.D. Four and one-half miles southeast of Salmo, extending north from Sheep Creek, on Aspen Creek, and south to Annie Rooney Creek.

CLAIMS: BOY 1 to 4 Fractions, MAYFLOWER Fraction, and 42 surveyed mineral claims including HB (Lot 12672), GARNET, ZINCTON (Lots 10809, 10810), and Lots 9188 to 9190, 10441, 10822, 10823, 12668 to 12671, 12673 to 12678, 14388, 16041 to 16062 (DEER, ADA, LUCKY BOY, LEGAL TENDER, etc.).

OWNER: COMINCO LTD., Trail; mine office, Salmo.

METALS: Lead, zinc (production shown on Table 6).

DESCRIPTION:

The HB orebodies are contained within a broad, plunging syncline. The core of the syncline is occupied by Reeves dolomite, which plunges at 20 degrees to the south, is approximately 4,200 feet long, and is 200 to 400 feet wide.

The ore zones are contained in Reeves dolomite and are of two types. The largest zone is a steeply dipping set of discontinuous stringers which has a lead to zinc ratio of 1:5. The second type is flat lying and slightly brecciated with a lead to zinc ratio of about 1:2.5. There are several separate ore zones of the flat-lying variety. The mineralogy of the ore is relatively simple with pyrite, sphalerite, and galena in order of abundance. Pyrrhotite is found locally.

A smaller zone, about 500 feet west of the main HB mine, is known as the Garnet orebody. It accounts for about 10 per cent of current reserves. Whereas the main mine is entirely underground, the Garnet zone is mined to surface and a small pit is visible on the hillside.

The boundaries of the HB orebodies are determined by structure, lithology, and topography. To the south, the ore zones pinch out due to an upward refolding of the syncline. At the north end, the ore zones trend to surface and are almost completely oxidized to a depth of 300 feet.

WORK DONE: Tons milled, 256,121; lead, 0.95 per cent; zinc, 3.70 per cent.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 57, 58.

JACKPOT (82F/SW-12 to 15) (Fig. A, No. 41)

LOCATION: Lat. 49° 15' Long. 117° 09' (82F/3E)
NELSON M.D. Six and one-half miles northeast of Salmo, on and extending west from lower Active and Spot Creeks, between 4,500 and 5,500 feet elevation.

CLAIMS: INK SPOT, JACKPOT, ACE, JAMESONITE, CANADIAN BOY, CANADIAN GIRL, TWO SPOT, SPOT Fraction, CHIEF, JAY, CHIEF Fraction, JAY Fraction, JAMESONITE Fraction, ELM 5 Fraction, RUSH 1, RUSH 1 Fraction, and HUNTER V (Lot 2212), DOUBLE STANDARD (Lot 2213), MERCIA Fraction (Lot 2224), ELDORADO (Lot 5198), CHIHUAHUA (Lot 5199), CARMENCITA (Lot 5201).

OWNER: New Jersey Zinc Exploration Company (Canada) Ltd.

OPERATOR: COMINCO LTD., 200 Granville Square, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by isoclinally folded Lower Cambrian carbonate rocks of the Mural Formation in the southern Kootenay Arc. Lead-zinc mineralization occurs as massive sulphides within dolomite envelopes, and is a concordant Salmo-subtype deposit.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet and underground geological mapping, 1 inch equals 20 feet on Two Spot.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 58.

ANNEX, REEVES MacDONALD MINE (82F/SW-24, 26 to 29, 219) (Fig. A, No. 106)

By J.B.C. Lang

LOCATION: Lat. 49° 01' Long. 117° 22' (82F/3W)
NELSON M.D. At Remac, extending north from the International Boundary on both sides of the Pend-d'Oreille River.

CLAIMS: Large block including ANNEX 1 (Lot 14070), INTERNATIONAL LEAD 2 (Lot 12492), DREADNOUGHT (Lot 14034), RIVER (Lot 14036), etc., plus SUN 1 to 3, SUN 1 to 3 Fractions, BUD 1 to 11.

OWNER: REEVES MacDONALD MINES LIMITED, Remac.

METALS: Lead, zinc (production shown on Table 6).

DESCRIPTION: The Reeves and adjoining ore zone at the Annex mine are faulted sections of the main ore zone in the Reeves limestone member of the Laib Formation. The limestone has been dolomitized and subsequently replaced in part by galena, sphalerite, and pyrite.

WORK DONE:

During 1974 a total of 183,104 tons of ore was milled from the Annex mine and a total of 2,412 feet of lateral development and 716 feet of raising was completed. Test-holing at the Annex amounted to 5,177 feet.

At the Reeves mine 12,461 tons of ore was milled, while 705 feet of lateral work and 123 feet of raising were carried out.

The new Red Bird mine produced 1,702 tons of milling ore and 212 feet of drifting and crosscutting was completed.

(82F/3W)

A total of 552 feet of test-holing and 3,408 feet of diamond drilling was part of the Red Bird development programme.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 59.

BLUESTAR (82F/SW-236) (Fig. A, No. 42)

LOCATION: Lat. 49° 03′ Long. 117° 26′ (82F/3W)
NELSON M.D. Three and one-quarter miles northwest of Remac, extending north from the Pend-d'Oreille River, approximately 1,500 feet west of Tillicum Creek.
CLAIMS: BLUESTAR, BLUE RIDGE, GOLD RIDGE, DON V, ARGO, IRONSIDE.
OWNERS: J. A. Debriske and Peter Marchinek.
OPERATOR: J. A. DeBRISKE, c/o 625 Dickens Street, Trail.
METALS: Gold, silver, lead, zinc, copper.
DESCRIPTION: Grey to green, close-banded, competent, siliceous argillite is cut by quartz veins containing some pyrite.
WORK DONE: Surface diamond drilling, one BQ hole totalling 154 feet on Bluestar.
REFERENCE: Assessment Report 5028.

SUNSET (82F/SW-160) (Fig. A, No. 43)

LOCATION: Lat. 49° 00′ Long. 117° 51′ (82F/4W)
TRAIL CREEK M.D. Four and one-half miles south of the Rossland municipal boundary, extending north from the International Boundary on the west side of Little Sheep Creek, at approximately 2,500 feet elevation.
CLAIMS: PAT 1 to 22, SUNSET (Lot 6563).
OWNER: BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.
METALS: Silver, lead, zinc, copper.
DESCRIPTION: East-trending lenses containing galena, sphalerite, and chalcopyrite occur in argillaceous sedimentary rocks, andesitic volcanic rocks, granite, and diorite.
WORK DONE: Geochemical soil survey, 539 samples, 400-foot grid spacing, 20 line-miles covering Pat 1-22.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1964, p. 114; Assessment Report 5355.

JOB (Fig. A, No. 46)

LOCATION: Lat. 49° 02′ Long. 117° 53′ (82F/4W)
TRAIL CREEK M.D. Four miles southwest of Rossland, on the southwest slope of Ivanhoe Ridge, covering the headwaters of Sophia Creek.

(82F/4W)

CLAIMS: JOB 1 to 46, 48 to 51, JOB 47 Fraction.

OWNER: CHARLES FRANKLIN AGAR, 3408 Liddell Court SW., Calgary, Alta.

DESCRIPTION: The claims are underlain mainly by ultrabasic rocks, mostly serpentinite. Magnetite and chromite are present in the serpentine.

WORK DONE: 1973 – geochemical survey, seven 20-pound samples of serpentinite taken and assayed principally for platinum covering Job 15, 16, 18, 51.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 60; Assessment Reports 4269, 4927.

BLUEBIRD (82F/SW-145, 146) (Fig. A, No. 44)

LOCATION: Lat. 49° 04′ Long. 117° 48′ (82F/4W)
TRAIL CREEK M.D. One-half mile south of the Rossland municipal boundary, astride Trail Creek, at approximately 2,900 feet elevation.

CLAIMS: BLUEBIRD (Lot 1053), COPPER QUEEN (Lot 1210), OLLA PODRIDA (Lot 799).

OWNER: Ross Island Mining Co. Ltd.

OPERATOR: STANDONRAY MINES LTD., 3567 West 27th Avenue, Vancouver V6S 1P9.

METALS: Zinc, lead, silver, gold (production shown on Table 6).

DESCRIPTION: The Bluebird vein occurs in volcanic rocks of the Mount Roberts Formation. Galena, sphalerite, pyrite, arsenopyrite, stibnite, and pyrrhotite occur in a gangue of quartz.

WORK DONE: Approximately 1,164 tons of ore was shipped from the I-13 vein on the Bluebird claim.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 60 (Blue Bird).

COXEY MINE (82F/SW-110, 111, 137, 140) (Fig. A, No. 45)

LOCATION: Lat. 49° 06′ Long. 117° 49′ (82F/4W)
TRAIL CREEK M.D. One and one-half miles northwest of the centre of Rossland, extending down the west and northwest slopes of Red Mountain to Little Sheep Creek, between 4,000 and 5,000 feet elevation.

CLAIMS: TOR 1 and 2 Fractions, GREY 1, 2, 9, 10 plus OPHIR (Lot 1829), JUMBO (Lot 965), HIGH ORE (Lot 641), NEVADA (Lot 966), GOOD FRIDAY (Lot 967), ONTARIO (Lot 1057), MOUNTAIN VIEW (Lot 682), COXEY (Lot 1221), PEAK (Lot 1209), SOUTHERN BELLE (Lot 1348), SAM HAYES (Lot 3014), EDDIE J (Lot 803).

OWNER: The International Nickel Company of Canada, Limited.

OPERATOR: MINE FINDERS, INC., 8700 West 14th Avenue, Lakewood, Colorado 80215.

METAL: Molybdenum.

DESCRIPTION: Irregularly distributed disseminations and veinlets of pyrrhotite, pyrite, magnetite, molybdenite, scheelite, and chalcopyrite occur in brecciated hornfels of the Mount Roberts Formation.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Jumbo, Gold King, High Ore, and Ontario claims; surface diamond drilling, 10 holes totalling 11,500 feet on Coxey, Nevada, and Jumbo claims.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 62, 63.

WEWA (82E/SE-167) (Fig. A, No. 13)

LOCATION: Lat. 49° 17′ Long. 118° 00′ (82E/8E; 82F/5W)
Report on this property in section 82E/8E.

HATTIE, DRUM LUMMON (82F/SW-213 to 215, 226) (Fig. A, No. 47)

LOCATION: Lat. 49° 15′ Long. 117° 23′ (82F/6W)
NELSON M.D. Six and one-quarter miles northwest of Salmo, on Erie Creek between Grassy, Young Grouse, and McKay Creeks, at approximately 3,500 feet elevation.
CLAIMS: HATTIE 1 to 15, 29 to 32, DAL 1, 4, 6, 13 to 17, plus Mineral Leases M-125 comprising BELLE (Lot 2461), ROSA (Lot 2460), FLORENCE (Lot 3237), BULLY BOY (Lot 3238), M-129 comprising NELSON (Lot 12177), MONTE CARLO (Lot 1066), GOODENOUGH (Lot 5466), DRUM LUMMON (Lot 5481), COPPER KING (Lot 5153), DORA (Lot 5152), HOMESTAKE (Lot 3433), and M-151 comprising EDDIE (Lot 12186).
OWNER: Dalhat Mines Limited.
OPERATOR: McINTYRE MINES LIMITED (formerly McIntyre Porcupine Mines Limited), Box 51, Commerce Court West, Toronto, Ont.
METALS: Molybdenum, copper.
DESCRIPTION: Molybdenite, chalcopyrite, and minor bornite occur as streaks, blebs, and fracture fillings with quartz in silicified granodiorite and granite. Small massive pyrite veins and disseminated pyrite also occur in argillites and associated sedimentary and clastic volcanic rocks.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Hattie 13, 15, 29-32, Dal 14, 16, and Mineral Leases M-125, M-129, and M-151; IP survey, 7 line-miles, 400-foot grid spacing covering same claims.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 440.

COTTONWOOD (82F/SW-237) (Fig. A, No. 48)

LOCATION: Lat. 49° 26′ Long. 117° 16′ (82F/6W)
NELSON M.D. Four miles south of Nelson, 3,000 feet west of Cottonwood Lake, on Gold Creek, at approximately 4,500 feet elevation.
CLAIMS: KENA 1 to 32.
OWNER: Otakar Janout.
OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

(82F/6W)

METAL: Gold.

DESCRIPTION: Gold occurs in pyritized schists of the Rossland Formation.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Kena 5, 7 and 1 inch equals 1,000 feet covering Kena 16-25; geochemical soil survey, 364 samples, 100 by 50-foot grid spacing, 3.5 line-miles covering Kena 5-10; percussion drilling, four holes totalling 820 feet on Kena 5, 7.

REFERENCES: *Geol. Surv., Canada,* Ann. Rept., 1888-1889, Vol. IV, pp. B62, B63; Assessment Report 5222.

CALIFORNIA, STARLIGHT (82F/SW-169, 174) (Fig. A, No. 49)

LOCATION: Lat. 49° 27′ Long. 117° 17′ (82F/6W)
NELSON M.D. Two miles south of Nelson, 200 feet east of Giveout Creek, about 6,000 feet upstream from its mouth, at approximately 6,000 feet elevation.
Lat. 49° 26′ Long. 117° 20′ (82F/6W)
NELSON M.D. Four miles south-southeast of Nelson, covering the headwaters of Sandy and Giveout Creeks, at approximately 6,000 feet elevation.

CLAIMS: PAR, PAR 1 to 3, BERT Fraction, VERA Fraction, ROYAL IRISH, ROYAL IRISH 1 to 3, TN, LOU, LOU 1, KEY 1 to 3, ATLANTIC DELIGHT, plus TOUGH NUT (Lot 199), STARLIGHT (Lot 684), BLACK WITCH (Lot 4146), GOLD BELL (Lot 4155), CALIFORNIA (Lot 1677), EXCHEQUER (Lot 391), UNION (Lot 8324), HILLSIDE (Lot 2238), DEADWOOD (Lot 2232), CLIFT (Lot 15029).

OWNERS: Richard Palmer, Shirley Palmer, and Granby Mining Corporation.

OPERATOR: GRANBY MINING CORPORATION, 1700, 1050 West Pender Street, Vancouver.

METALS: Silver, lead, zinc, copper.

DESCRIPTION: Chlorite and talc schists are cut by narrow lamprophyre dykes. Minor malachite was noted in one section.

WORK DONE: Surface diamond drilling, three holes totalling 610 feet on Par, Par 1, and Par 2.

REFERENCE: Assessment Report 5074.

SULLIVAN MINE (82F/NE-52, 53) (Fig. A, No. 107)

By J.B.C. Lang

LOCATION: Lat. 49° 43′ Long. 116° 00′ (82F/9E; 82G/12W)
FORT STEELE M.D. The Sullivan mine and concentrator are located within the city limits of Kimberley. The mine is located on Mark Creek 2 miles north of the city centre and the concentrator is 2 miles south of the city centre (Chapman Camp).

CLAIMS: The company owns 680 Crown-granted claims and fractions, including SHYLOCK, HAMLET, HOPE (Lots 1385 to 1387), JEW (Lot 2409), GEN FR., STONEY FR. (Lots 4050, 4051), MAC, OWEN SOUND BOY FR. (Lots 6189, 6190), KING GEORGE (Lot 10210), WINNIE

FR., XL FR., LINY FR., MOYIE FR., BEN FR., TRAIL FR., ERIC, DEER FR., ALTA FR., KARL (Lots 11992, 11993, 11995 to 12002), ETHEL FR. (Lot 12011), SEATON FR. (Lot 12527), and 582 located claims including LUKE, LATE, MAR, MAT, etc.

OWNER: COMINCO LTD., 200 Granville Square, Vancouver; mine office, Kimberley.

METALS: Silver, lead, zinc (production shown on Table 6).

DESCRIPTION:

The Sullivan orebody is between 200 and 300 feet thick and is conformable with the transition zone between the sedimentary rocks of the Lower and Middle Aldridge Formations. It occupies a broad anticline which plunges to the north. The crest of the anticline coincides approximately with the western margin of the orebody. The principal sulphides are pyrrhotite, sphalerite, galena, and pyrite. Chalcopyrite and arsenopyrite are minor constituents. Boulangerite is locally prominent, magnetite is fairly common, and cassiterite is widely present in small amounts.

WORK DONE:

During 1974, 1,416,489 tons of Sullivan ore was treated at the concentrator. The concentrator operated 179 days during 1974.

Tunnel development totalled approximately 16,840 feet and underground diamond drilling about 1,799 feet. Backfill totalled 443,514 cubic yards of rock and cave. Major blasts during the year were few, the largest being the final stage of U-13-30 (85,600 tons) on March 1. Unprecedented preparations and safeguards were necessary for the blasting of 40,000 tons of hot ore on February 1 (T-10-30).

GROUND CONTROL: A surface cave appeared in the D-4 area in March, following the D-4-30 pillar blast. This eliminated the danger of a hangingwall collapse and airblast that had existed through most of 1973.

Surface caves at E-7, R-8, S-9, and T-9 enlarged during the year as a result of drawdown production underground. Surface subsidence over U-13-30 block increased and it is anticipated that this will develop into a cave during 1975. This cave will probably vent sulphur dioxide to surface, similar to R-8, S-9, and T-9 caves.

Bad ground conditions continued to affect all activities in the below 3900 section pillars. These conditions, resulting from the No. 2 fault zone and incompetent footwall rocks, will persist through 1975. They had an adverse effect on production capability and the ability to maintain the forecast zinc grades in the below 3900 section in 1974. Since they will continue they represent a major obstacle to the fulfillment of the forcast mine zinc production in 1975.

TECHNICAL DEVELOPMENT: Equipment to measure mine airway resistances was on order at year end. Information is required for computer simulation of ventilation circuits.

Extensive testing was done on a treatment process for neutralizing the mine drainage.

A report on the investigation of sulphide oxidation process in the Sullivan was issued in November.

A prototype hydraulic-powered diamond drill was constructed and is undergoing trials.

Trovex SD-50 was introduced in place of forcite in longhole blasting.

The extension of electric blasting systems in slushing and development work was continued.

Financial approval was sought for the construction of a new explosives plant.

The direct-fire heating plants at No. 1, No. 24, and No. 33 shafts and the indirect-fire heating plant at No. 41 shaft operated with a combined maximum input of 53.8×10^6 Btu per hour that required approximately 51 MCF per hour of natural gas at minimum supply pressure of approximately 25 psig. The heating season generally starts about October 15 and continues to about April 15. The total volume of air heated is approximately 850,000 cfm. Direct-fire heating plants were tested regularly for combustion contaminants discharged into the main airstream.

Contaminants from 'hot muck' areas were isolated from the regular mine ventilation network and directed to surface by No. 26, No. 31, and No. 42 exhaust shafts. The exhaust shafts and caves were monitored on regular basis for sulphur dioxide emission to surface and No. 1 and No. 24 shafts were monitored continuously for sulphur dioxide contamination of intake air.

Dust surveys on all underground operations were performed by Konimeter method.

Some 125 vaneaxial and centrifugal fans of varying capacity and horsepower are available and used for directing air to secondary ventilation circuits.

Employees totalled 646 at the mine and 256 at the concentrator.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 67-69.

GOOD HOPE **(82F/NE-72)** **(Fig. A, No. 54)**

LOCATION: Lat. 49° 33′ Long. 116° 19′ (82F/9W)
FORT STEELE M.D. Seven and one-half miles west-southwest of the sawmill on St. Mary Lake, extending from Fiddler Creek up the southwest slope of Mount Evans.

CLAIMS: JAG 17 to 22, 39 to 44, 51 to 56.

OWNER: J. A. Gilbert.

OPERATOR: MOUNT EVANS COPPER CORP. INC., 420, 120 Adelaide Street West, Toronto, Ont.

METAL: Copper.

DESCRIPTION: Middle Aldridge Formation quartzites are intruded by Moyie metadiorite sills. Quartz-calcite veins in the sills carry pyrrhotite, pyrite, chalcopyrite, and minor galena and sphalerite.

WORK DONE: 1973 – geochemical survey, 25 soil and silt samples taken along roads and streams; IP survey, 800 line-feet covering Jag 17, 19-22, 41-44, 53, 55.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 70; Assessment Report 4829.

KALISPELL (82F/SW-166) (Fig. A, No. 50)

LOCATION:	Lat. 49° 52′ Long. 117° 25′ (82F/14W) SLOCAN M.D. Seven miles north-northeast of Slocan, on Enterprise Creek, three-quarters of a mile upstream from Slocan Lake, at approximately 4,000 feet elevation.
CLAIMS:	KALMAR (Lot 1012), KAISER (Lot 1254), KALISPELL (Lot 1011).
OWNER:	Peter Leontowicz.
OPERATOR:	McCORMICK ELECTRIC LTD., 100, 885 Dunsmuir Street, Vancouver.
METALS:	Silver, lead, zinc, silica.
DESCRIPTION:	A sheared and faulted zone occurs in an inclusion of sedimentary rocks in coarse-grained porphyritic granite.
WORK DONE:	Surface diamond drilling; trenching, 80 feet; road construction, 1 mile on Kalispell.
REFERENCE:	*Geol. Surv., Canada,* Mem. 184, p. 177.

HEWITT (82F/NW-65) (Fig. A, No. 108)

By J.B.C. Lang

LOCATION:	Lat. 49° 56′ Long. 117° 18′ (82F/14W) SLOCAN M.D. Three miles east-southeast of Silverton, 500 feet west of Twigg Creek, a tributary of Silverton Creek, at approximately 3,700 feet elevation.
CLAIMS:	HEWITT (Lot 4440), LORNA DOONE (Lot 1401).
OWNER:	ARJAN PACIFIC LTD., 1712 West Fourth Avenue, Vancouver.
METALS:	Silver, lead, zinc.
DESCRIPTION:	Mineralization occurs in a shear zone up to 200 feet. Economic deposits occur where this shear zone cuts across bedding planes in Slocan Group sedimentary rocks. Two such areas are known on the property.
WORK DONE:	Approximately 1,300 feet of the 10W adit was reopened and rehabilitated to the shear zone. As the heading was caved at this point, a run-around was collared and advanced about 200 feet on grade. Portal conveniences were completed and compressor and dry houses were built. All underground work was in waste rock.
REFERENCE:	*B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 76, 77.

RECO, BLUEBIRD, NOBLE FIVE (82F/NW-19, 20, 31 to 37, 200) (Fig. A, No. 52)

LOCATION:	Lat. 49° 59′ Long. 117° 11′ (82F/14E) SLOCAN M.D. Eight miles east of New Denver, extending south from Mount Reco and Mount Payne to Carpenter Creek at Cody, between 4,000 and 7,000 feet elevation.
CLAIMS:	Sixty-eight including RUECAU (Lot 624), BLUEBIRD (Lot 540), NOBLE FIVE (Lot 467), NUMBER ONE (Lot 4560), GREY COPPER (Lot 580), TEXAS (Lot 589), CHAMBERS (Lot 1752).
OWNER:	Reco Silver Mines Limited.

(82F/14E)

OPERATOR: RAYROCK MINES LIMITED, 1011, 2200 Yonge Street, Toronto, Ont. M4S 2C6.

METALS: Silver, lead, zinc.

DESCRIPTION: Sedimentary rocks belonging to the Slocan Group are intruded by numerous quartz feldspar porphyry dykes. Galena-sphalerite-pyrite ore shoots occur in structurally controlled traps along shear zones.

WORK DONE: Underground work, 776 feet on Chambers.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 81.

MADISON (82F/NW-38) (Fig. A, No. 53)

LOCATION: Lat. 49° 59′ Long. 117° 13′ (82F/14E)
SLOCAN M.D. Six and one-half miles east of New Denver, on the south and west slopes of Mount Payne, extending to Carpenter Creek and Sandon.

CLAIMS: SLVR 2 to 6, SLVR 1 Fraction, S Fraction, FIFI, JON 1 to 8, JON Fraction, GOLD Fraction, SILVER Fraction, ZINC Fraction, SHAR 1 to 4, ARGENTITE 1, 4, plus MADISON (Lot 1411), GREAT EASTERN (Lot 2289), LEGAL TENDER (Lot 1749), LD FR. (Lot 4535), SLOCAN BELLE (Lot 1921), and Mineral Lease M-369 comprising SILVER BILL (Lot 3530).

OWNER: PRISM RESOURCES LIMITED, 805, 850 West Hastings Street, Vancouver.

METALS: Silver, lead, zinc.

WORK DONE: Geochemical survey, 229 soil and road-cut samples taken at 100-foot intervals along roads and selected traverses covering SLVR 1 Fraction, 2-6, Shar 1-4, Argentite 1, 4, Silver Bill, and Slocan Belle.

REFERENCES: *Geol. Surv., Canada*, Mem. 184, p. 74; Assessment Report 5219.

ALTOONA (82F/NW-15) (Fig. A, No. 51)

LOCATION: Lat. 50° 00′ Long. 117° 15′ (82F/14E)
SLOCAN M.D. Five and three-quarter miles east of New Denver, on the west slope of Mount Payne, 1,000 feet upstream on a westerly flowing tributary of Carpenter Creek, at approximately 3,500 feet elevation.

CLAIMS: ALTOONA (Lot 1918), BOWKNOT (Lot 1919).

OWNER: HALLMAC MINES LIMITED, 35, 448 Seymour Street, Vancouver.

METALS: Silver, lead, zinc, cadmium.

DESCRIPTION: The claims include the northeastern edge of a broad belt of quartzites, argillites, some limestones, and calcareous strata of the Slocan Group. The sedimentary rocks strike northwesterly, dip southwest, and are intruded by two granitic stocks and porphyry dykes and sills.

WORK DONE: Mapping and rehabilitation of No. 3 and 4 level portals; underground diamond drilling, approximately 770 feet on Altoona (from face of 144-foot crosscut driven in 1970); No. 4 level surveyed; one-half mile of road repaired (Altoona).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 454; *Geol. Surv., Canada*, Mem. 184, pp. 4, 5.

SILMONAC (MINNIEHAHA) (82F/NW-50) (Fig. A, No. 109)

By J.B.C. Lang

LOCATION: Lat. 49° 58' Long. 117° 15' (82F/14)
SLOCAN M.D. Five miles east-northeast of Silverton, covering the headwaters of the east fork of Tributary Creek, at approximately 5,500 feet elevation.

CLAIMS: Sixty-two claims and several leases including MINNIEHAHA (Lot 3170), TORNADO (Lot 5537), C&K (Lot 5974), BOSS FR. (Lot 15272).

OWNER: Silmonac Mines Limited.

OPERATORS: KAM-KOTIA MINES LIMITED and BURKAM MINES LTD., Box 189, New Denver.

METALS: Silver, lead, zinc (production shown on Table 6).

DESCRIPTION: The property is underlain by massive argillaceous to quartzitic sedimentary rocks of the Slocan Group. Galena and sphalerite mineralization is erratically distributed within a lode system occupying a flatly dipping fault zone. Development has occurred on several levels connected by raises and many stopes.

WORK DONE:

Mining and milling operations were continuous throughout the year but at a lower rate of production. Production in 1974 was from salvage of ore remnants and from exploratory headings in search of new ore.

Mill production totalled an estimated 8,927 tons yielding 726 tons of lead concentrate and 747 tons of zinc concentrate.

Development work consisted of a total of 825.5 feet of drifting and crosscutting, 26.5 feet of raising, and 1,002.5 feet of declines and ramps.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 78.

COPA (Fig. A, No. 55)

LOCATION: Lat. 49° 52' Long. 116° 46' (82F/15W)
SLOCAN M.D. Eight miles north-northeast of Riondel, on Bernard Creek, 3.75 miles east of Kootenay Lake.

CLAIMS: COPA 1 to 16.

OWNER: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

DESCRIPTION: The property is underlain by Windermere sedimentary rocks of Late Proterozoic age which dip moderately to steeply to the west. Quartzites of the Hamill Group are overlain and intercalated with magnesian limestone of the Badshot Formation, which is in turn overlain by the Lardeau Group of schist, quartzite, and paragneiss. A small granitic intrusion, probably of Mesozoic age, is located one-half mile east of the property and a similar larger intrusion lies 2 miles to the west.

WORK DONE: Linecutting and time-domain IP survey, 4 line-miles covering Copa 4, 6, 8, 12, 14, 16; geochemical soil survey, 291 samples taken at 100 by 400-foot grid spacing covering Copa 4, 6, 8, 11-16.

REFERENCES: Assessment Reports 5240, 5241.

HILO (82F/NE-102 to 104) (Fig. A, No. 56)

LOCATION: Lat. 49° 48' Long. 116° 20' (82F/16W)
FORT STEELE M.D. Twenty-three and one-half miles east-northeast of Riondel, 6 miles north-northeast of the confluence of Dewar and White Creeks, extending down the north side of Mount Patrick to Diorite Lake, between 6,000 and 8,600 feet elevation.

CLAIMS: HILO 1 to 10.

OWNER: Texasgulf, Inc.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by clastic sedimentary rocks of the Lower and Middle Aldridge Formation which have been intruded by dioritic Moyie sills. Galena and sphalerite occur in vein and replacement deposits in both the sedimentary and intrusive rocks. (Note – mineral inventory numbers given in 1973 were incorrect.)

WORK DONE: Shootback electromagnetic survey (checking of previously reported anomalies).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 414; 1973, p. 82; Assessment Reports 3300, 4713.

FERNIE 82G

COMMERCE (82G/SE-6, 39, 41 to 43) (Fig. A, No. 57)

LOCATION: Lat. 49° 11' Long. 114° 22' (82G/1W)
FORT STEELE M.D. Approximately 4 miles east of the Flathead River, covering the headwaters of Commerce Creek from the Interprovincial Boundary to Sunkist Mountain and Commerce Peak.

CLAIMS: COMMERCE 1 to 16, 19 to 38, 41 to 48, 50 to 91, CHAIN LINK 39.

OWNERS: D. F. Goble, R. J. Goble, E. O. Goble, E. M. Goble, L. E. Goble.

OPERATOR: KINTLA EXPLORATIONS LIMITED, 7, 8540 – 109th Street, Edmonton, Alta.

METALS: Gold, silver, copper.

DESCRIPTION: Quartz-siderite veins up to 3 inches wide and carrying concentrations of tetrahedrite, chalcopyrite, pyrrhotite, malachite, and azurite, occur in minor faults in the cores of two tight anticlines near the top of the Grinnell Formation. On Hopper and Sunkist Mountains two dolomite beds in the Phillips Formation carry very fine-grained bornite, covellite, hematite, and malachite.

WORK DONE: 1973 – geochemical survey, 435 rock samples taken from diorite dykes and sills in the Andradite-Gossan-Sill Mountains area and assayed for gold and silver; nine rock samples taken from a dolomite bed on Hopper Mountain; 19 rock samples taken from two sandstone beds north of Commerce Peak and assayed for copper and silver; prospecting of new claims on Sunkist Mountain and north of Gossan and Sill Mountains.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 83; Assessment Report 5070.

MIDWAY (82G/SW-21) (Fig. A, No. 58)

LOCATION: Lat. 49° 14′ Long. 115° 53′ (82G/4W)
FORT STEELE M.D. Four and one-quarter miles south-southeast of Moyie, on the north side of the Moyie River, about 4,000 feet downstream from the mouth of Sundown Creek.

CLAIMS: MIDWAY 1 to 5, JAN, RAILWAY, GORDON, KELLY.

OWNERS: Merritt J. Leask and John Caldwell.

OPERATOR: DORVAN MINES LTD., c/o William E. Schmidt, Barrister and Solicitor, 540 Howe Street, Vancouver.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: A quartz vein occurs in quartzitic sedimentary rocks of the Aldridge Formation which dip 20 to 30 degrees to the north and northeast. The vein ranges in width from a crack to several feet of shattered quartz. Ore shoots consist of concentrations of pyrite and some galena and sphalerite.

WORK DONE: Magnetometer and electromagnetic survey, 3,200 line-feet and geochemical soil survey, 49 samples taken at 100 by 400-foot grid spacing covering Midway 1-3 and Jan.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1965, p. 198; 1966, p. 241; Assessment Report 5049.

TIE (Fig. A, No. 59)

LOCATION: Lat. 49° 25′ Long. 115° 21′ (82G/6W)
FORT STEELE M.D. Thirteen and one-quarter miles east-southeast of Fernie, 3 miles east of Wardner, 1.25 miles northwest of Tie Lake, at approximately 3,000 feet elevation.

CLAIMS: TIE 1 to 8.

OWNER: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

DESCRIPTION: Brecciated limestone contains some pyrite.

WORK DONE: Surface diamond drilling, two holes totalling 497 feet on Tie 3.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 63; Assessment Report 5032.

BULL RIVER MINE (82G/N-2) (Fig. A, No. 60)

By R. W. Lewis

LOCATION: Lat. 49° 30′ Long. 115° 23′ (82G/11W)
FORT STEELE M.D. Fourteen and one-half miles due west of Fernie, extending north from the Bull River, astride Burntbridge Creek, between 3,000 and 3,500 feet elevation.

CLAIMS: Mineral Lease M-69 comprising Lots 14717 to 14752 which includes BIG BONANZA 1 to 4, BONANZA 5 to 14, 17, 19, LIZ 1 to 3, 8, 9, 11, 13, and 14 Fractions, FEB 1 to 4, JUNE 1, 8 to 13 plus JUNE 2 to 6, BONANZA 15, 16, 18, 20 to 33, 38, 40.

OWNER: PLACID OIL COMPANY, 860 Guinness House, 727 Seventh Avenue SW., Calgary, Alta. T2P 0Z5; mine address, Box 850, Cranbrook; Leo Piwek, general superintendent.

(82G/11W)

METALS: Copper, silver, gold (production shown on Table 6).

DESCRIPTION: Quartz-siderite veins containing chalcopyrite, pyrite, and pyrrhotite occur in the Aldridge Formation which is cut by diorite dykes.

WORK DONE:

During the past few years this deposit has been worked by open-pit methods. The mining and milling operation ceased during the year because of depletion of ore reserves. An attempt was also made to develop an underground mine, but this had to be abandoned because of adverse mining conditions.

MINING: Ore reserves in pit No. 1 were depleted the first week in March and mining operations at the mine were suspended indefinitely.

As crews became available they were employed on the reclamation programme, backfilling, shaping, and contouring the dump areas and the perimeter of No. 1 pit.

MILLING: The milling of all ore mined in 1974 and that stockpiled during earlier mining was completed on June 10. A total of 107,039 tons of ore was processed, yielding 9,178 tons of concentrate.

Manpower in the mill was maintained at 10 operators, one mechanic, and one electrician.

EXPLORATION: In order to determine the feasibility of mining the underground reserves, the company elected to sink an exploration decline of minus 15 per cent to intersect zone A underground at elevation 2,830, approximately 700 feet from the portal at an elevation of 2,900 was collared southeast of the tailings pond 100 feet north of the highway on Mineral Lease M-69.

Work commenced in February when a total of 41,800 broken cubic yards of overburden was stripped away from the site of the portal to enable access to the rock face.

After several abortive attempts to collar the portal, the programme was abandoned due to very blocky ground which could not be economically stabilized.

The area of the surface affected, comprising approximately 2.5 acres, was partially reclaimed in 1974 and is scheduled for completion in early 1975.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 84, 85.

CORONADO, CEDAR (82G/N-18, 60, 68) (Fig. A, No. 61)

LOCATION: Lat. 49° 43' Long. 115° 30' (82G/11W)
FORT STEELE M.D. Eighteen miles northeast of Cranbrook, extending south from East Wild Horse River to the headwaters of Wallinger Creek.

CLAIMS: CEDAR 1 to 15, 22, 23, 28, 29, COR 1 and 2, NEW COR 3 to 9, 11, 13, CEDAR EXTENSION 1 to 14, plus Mineral Lease M-50 comprising CORONADO, ARENA, ARENA FR. (Lots 3535 to 3537).

OWNER: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Lead, zinc, copper.

DESCRIPTION: Tetrahedrite occurs as blebs and in discontinuous veinlets in dolomite. Scheelite is present near the contact with a monzonite plug.

(82G/12E)

WORK DONE: Surface geological mapping, 1 inch equals 800 feet covering Cedar claims; geochemical soil survey, 1,000 samples, 200-foot grid spacing, 19.3 line-miles covering Cedar Extension, New Cor, and Cedar claims; claims surveyed (Mineral Lease M-50); road construction, 800 feet on Cedar Extension 13.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 473; 1972, p. 66.

SULLIVAN MINE (82F/NE-52, 53) (Fig. A, No. 107)

LOCATION: Lat. 49° 43' Long. 116° 00' (82F/9E; 82G/12W)
Report on this property in section 82F/9E.

KOOTENAY KING (82G/N-9) (Fig. A, No. 62)

LOCATION: Lat. 49° 44' Long. 115° 35' (82G/12E)
FORT STEELE M.D. Sixteen and one-quarter miles north-northeast of Cranbrook, on the east side of Lakit Mountain, covering the headwaters of Victoria Creek.

CLAIMS: KK 1 to 4, 9 plus Mineral Lease M-53 comprising WATSON (Lot 7770), KOOTENAY KING (Lot 7789).

OWNER: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Silver, lead, zinc.

DESCRIPTION: Bedded pyrite, galena, and sphalerite occur in folded argillites, grey-green argillaceous dolomite, and impure quartzites of the Aldridge Formation.

WORK DONE: Geochemical survey, 80 rock samples taken at 100-foot intervals on eight traverses across the formation strike covering KK 1-4, 9.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1951, p. 186; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 418; Assessment Reports 3324, 3325, 5245.

LARDEAU 82K

DUBLIN QUEEN (NORTHERN BELLE) (82K/SW-15) (Fig. A, No. 69)

LOCATION: Lat. 50° 00' Long. 117° 10' (82K/3E)
SLOCAN M.D. Nine miles east of New Denver, at the head of Stenson Creek, a tributary of Kaslo Creek from the south, between 5,000 and 7,000 feet elevation.

CLAIMS: DUBLIN QUEEN (Lot 1167), LUCKY JACK Fraction, plus nine adjoining claims.

OWNER: Iskut Silver Mines Limited.

OPERATOR: FOSTALL MINES LTD., Box 40, Robson.

METALS: Silver, lead, zinc.

(82K/3E)

DESCRIPTION: Stringers containing silver, lead, and zinc ore occur in argillites.

WORK DONE: Face of tunnel on Lucky Jack Fraction cleaned; 50 tons of ore salvaged from dump but not shipped.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 87; *Geol. Surv., Canada*, Mem. 184, pp. 224-227.

SILVER GLANCE, PANAMA (82K/SW-28, 56) (Fig. A, No. 70)

LOCATION: Lat. 50° 04' Long. 117° 12' (82K/3E)
SLOCAN M.D. Nine miles northeast of New Denver, on the southeast slope of London Ridge, covering the headwaters of Watson Creek, at approximately 6,500 feet elevation.

CLAIMS: BOURBON (Lot 12629), BOURBON 2 (Lot 12630), BALDWIN (Lot 12631), PANAMA (Lot 3152), BOOSTER (Lot 12628), BOURBON FR. (Lot 12632), LONDON (Lot 1416), THIRD OF JULY (Lot 1417), SUMMIT QUEEN (Lot 3830), QUEEN (Lot 12627), KING (Lot 12626), SILVER GLANCE (Lot 3829), SILVER GLANCE FR. (Lot 12633).

OWNER: UNITED HEARNE RESOURCES LTD., 14th Floor, 1199 West Hastings Street, Vancouver.

METALS: Silver, copper, lead, zinc (production shown on Table 6).

DESCRIPTION: The property is underlain by slates, argillites, limestones, quartzites, and tuffaceous sedimentary rocks of the Slocan Group, cut by granitic rocks of the Nelson batholith. Argentite, tetrahedrite, and minor galena and sphalerite occur in quartz veins.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; surface diamond drilling, two holes totalling 75 feet on Silver Glance; road construction, one-half mile on Summit Queen and Silver Glance; underground work, bulk sample (81 tons) from Panama.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 457; *Geol. Surv., Canada*, Mem. 184, pp. 228, 246, 247.

MINERAL KING MINE (82K/SE-1) (Fig. A, No. 67)

By R. W. Lewis

LOCATION: Lat. 50° 21' Long. 116° 26' (82K/8W)
GOLDEN M.D. Twenty miles southwest of Invermere, extending south from Jumbo Creek to the confluence of Toby and Stark Creeks.

CLAIMS: Group of claims including BLUFF 1 to 4, COUNT Fraction, DUKE, and SILVER KING (Lot 12866), DUCHESS (Lot 11258), LOWLANDER 2 (Lot 15968), MK 2 (Lot 15970).

OWNER: Mountain Minerals Limited.

OPERATOR: PURCELL DEVELOPMENT CO. LTD., Box 1, Fairmont Hot Springs; mine address, Box 990, Invermere; W. W. Cummings, manager.

METALS: Lead, zinc, silver (production shown on Table 6).

(82K/8W)

WORK DONE:

Mining activities at the Mineral King mine which had ceased in 1967 were resumed on a small scale by Purcell Development Co. Ltd. during 1974 under an agreement with the owner, Mountain Minerals Limited.

In the early part of the year the company rehabilitated the No. 3 level and the No. 7 level from the portals to the points where these levels intercepted the No. 1 shaft, in order to mine a pillar of ore extending from the No. 5 level down to the No. 4 level in the vicinity of the shaft pillar.

After rehabilitating the two levels and the No. 1 shaft, a certain amount of subdrifting development work was performed in order to longhole mine the ore contained in the vicinity of the shaft pillar.

A 200-ton-per-day-capacity concentrator was constructed near the confluence of Jumbo Creek with Toby Creek. This concentrator began treating the mine ore late in October. Prior to this date Purcell Development Co. Ltd. attempted to treat the old tailings from the Paradise mine, however an unacceptable concentrate was produced and the project was abandoned pending further bench tests.

A total of 29 persons was employed at the operation.

REFERENCE: *Minister of Mines, B.C.,* Ann. Report., 1967, pp. 267-269.

PARADISE, BALD EAGLE (82K/SE-29, 39, 58) (Fig. A, No. 64)

LOCATION: Lat. 50° 29′ Long. 116° 18′ (82K/8W)
GOLDEN M.D. Twelve miles west of Invermere, extending northwest from the headwaters of Springs Creek to Bruce Creek, at approximately 7,500 feet elevation.

CLAIMS: COMSTOCK (Lot 4342), SHAMROCK (Lot 4344), OVERSIGHT FR. (Lot 11266), LAST CHANCE (Lot 11262), PARRIDICE (Lot 4341), OVERSIGHT (Lot 11265), BLUE GROUSE (Lot 11261), SILVER CACHE (Lot 11263), ROYAL STAG (Lot 4343), PTARMIGAN (Lot 4345), BOHUNK (Lot 11264), plus PARADISE 1 to 14.

OWNER: J.A.C. Ross.

OPERATOR: PURCELL DEVELOPMENT CO. LTD., Box 1, Fairmont Hot Springs; property address, Box 990, Invermere.

METALS: Lead, zinc, silver (production shown on Table 6).

DESCRIPTION: Galena, sphalerite, and pyrite occur in a replacement deposit in a black carbonate rock near the upper contact of Mount Nelson Formation.

WORK DONE: Linecutting and geochemical soil survey, 125 samples, 200 by 200-foot grid spacing, 5 line-miles covering Parridice, Oversight, Blue Grouse; road construction, 3 miles (access to north side of Paradise claims); underground work, opened Burman workings and examined Paradise 11 and 12.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1899 to 1909, 1915 to 1930, 1943 to 1953; 1949, pp. 196-199; 1964, p. 135.

REDMAC (82K/NW-59) (Fig. A, No. 65)

LOCATION: Lat. 50° 30′ Long. 116° 27′ (82K/8W, 9W)
GOLDEN M.D. Eighteen miles west of Invermere, on McDonald and Red Line Creeks at their confluence.

CLAIMS: REDMAC 1 to 16.

OWNERS: Vern Bostock, Val Winser, and Walt Konkin.

OPERATOR: LONGBAR MINERALS LTD., 100, 10975 – 124th Street, Edmonton, Alta.

METALS: Silver, lead.

WORK DONE: Linecutting and self-potential survey, 3.2 line-miles; geochemical soil survey, 70 samples taken at 100-foot intervals along and near the baseline for dithizone testing covering Redmac 1-6.

REFERENCE: Assessment Report 5169.

SILVER DOLLAR (82K/NW-101) (Fig. A, No. 68)

LOCATION: Lat. 50° 45′ Long. 117° 34′ (82K/12E)
REVELSTOKE M.D. Seven miles east of Beaton, on a west-flowing branch of Mohawk Creek, near its headwaters, at approximately 6,000 feet elevation.

CLAIMS: IRON DOLLAR (Lot 7059), CARBONATE HILL (Lot 7060).

OWNER: RESOURSEX LTD., 303 Wildwood Drive SW., Calgary, Alta.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: The claims are underlain by grey and green grit, dark grey and green phyllite, and minor volcanic rocks of the Broadview Formation. At the Silver Dollar the carbonaceous chloritic schists are cut by quartz veins bearing pyrite, pyrrhotite, galena, sphalerite, and occasional patches of tetrahedrite.

WORK DONE: Surface geological mapping, 1 inch equals 300 feet and minor sampling covering Iron Dollar and Carbonate Hill.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1957, p. 58; *Geol. Surv., Canada*, Bull. 2, 1914, p. 22; *Geol. Surv., Canada*, Mem. 161, p. 40; Assessment Report 5209.

RUTH VERMONT (82K/NE-9) (Fig. A, No. 100)

By R. W. Lewis

LOCATION: Lat. 50° 57′ Long. 116° 59′ (82K/15W)
GOLDEN M.D. Twenty-seven miles west of Spillimacheen, on Vermont Creek, a tributary of Vowell Creek, at approximately 5,500 feet elevation.

CLAIMS: Mineral Lease M-16 comprising RUTH, MINNIE (Lots 418, 419), CHARLOTTE (Lot 405), CLEOPATRA, VERMONT, SHEBA, RUTH FR. (Lots 8122 to 8125), plus the located claims DIANE, MARGARET, DEBBIE, ANNA, MAUREEN, CAROL, CAROL ANNA 1 to 6, BONGO 1 to 12, DIPSEY 1 to 6, 9, 11, 13, LYNN 1 to 3 Fractions.

(82K/16W)

OWNER: CONSOLIDATED COLUMBIA RIVER MINES LTD., 302, 475 Howe Street, Vancouver.

METALS: Silver, lead, zinc.

DESCRIPTION: The claims are overlain by rocks of the Horsethief Creek Formation. Mineralization consists of sulphides which have replaced limestone.

WORK DONE:

There were no mining nor milling activities at this operation during 1974. The property suffered extensive damage from snow avalanches during January 14 to 16. The series of snowslides that occurred at this time were from both the north and south sides of the valley.

The avalanche from the south slope completely destroyed the powerhouse facility, most of the dry building, the mechanical maintenance shop, storage sheds, the tramway portion of the crushing house, and the southwest corner of the mill. The avalanche from the north slope extensively damaged the No. 1 and No. 2 bunkhouses, and also caused damage to the mine office building.

A caretaking staff of two persons has been on the property for most of 1974.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 96.

BEVERLY MINE (82K/NE-1, 28) (Fig. A, No. 66)

LOCATION: Lat. 50° 57′ Long. 116° 28′ (82K/16W)
GOLDEN M.D. Four and one-half miles northwest of Spillimacheen, covering the northeast flank of Jubilee Mountain, at approximately 5,000 feet elevation.

CLAIMS: ATLANTA (Lot 134), HORSESHOE (Lot 266), LONDON (Lot 15303), WINCHESTER (Lot 15304), CORNWALL (Lot 15305), MOUNTAIN DAISY (Lot 647), LANCASTER (Lot 1112), SILVER KING (Lot 648) plus LUCK 1 to 12, HOPE 1, 2, 5 to 7.

OWNERS: Peter Klaui and Beverley Mines Limited.

OPERATOR: DeKALB MINING CORPORATION, 6th Floor, 630 Sixth Avenue SW., Calgary, Alta.

METALS: Lead, silver, zinc, copper, gold.

DESCRIPTION: Disseminated galena, sphalerite, local chalcopyrite, and chalcocite occur in the Jubilee Mountain Formation.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Luck 1 to 12 and Crown grants; vertical-loop electromagnetic survey, 200-foot grid spacing covering same claims; surface diamond drilling, 18 holes totalling 4,495 feet on Luck 2 and London; surface workings surveyed; grid recut on Hope 1, 2, 5-7; road construction, one-half mile on Luck 2 and London.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 341; Assessment Report 5013.

VERNON 82L

KL (82L/SE-21) (Fig. A, No. 75)

LOCATION: Lat. 50° 08′ Long. 118° 19′ (82L/1W)
VERNON M.D. Twenty-nine and one-half miles east-southeast of Lumby, extending north from approximately one-quarter mile north of the east end of Keefer Lake, at approximately 4,800 feet elevation.

CLAIMS: KL 1 to 13, KL 13 and 14 Fractions.

OWNER: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

METAL: Gold.

DESCRIPTION: The claims are underlain mainly by Cache Creek Group black argillite and siltstone. Toward the southwest the argillite is hornfelsed adjacent to quartz diorite dykes. The southeast part of the area is underlain by Cache Creek andesite, generally metamorphosed to greenstone. A small diorite stock intrudes the greenstone on the south property line. Narrow pyrite-bearing quartz veins cut both quartz diorite and hornfels. Small amount of gold occurs with arsenopyrite in some of the quartz veins.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 555 samples, 400 by 100-foot grid spacing, 13 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 98; Assessment Report 5279.

ROSE (Fig. A, No. 72)

LOCATION: Lat. 50° 08′ Long. 118° 20′ (82L/1W)
VERNON M.D. Twenty-nine miles east-southeast of Lumby, 500 feet north of the eastern part of Keefer Lake, at approximately 5,000 feet elevation.

CLAIMS: Rose 1 to 6.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver V6C 1N5.

DESCRIPTION: Arsenic and silver soil geochemical anomalies were outlined in the 1973 work. Pyrite and traces of pyrrhotite were the only minerals found. The property is underlain mainly by argillite and some rhyolite tuff, both of the Cache Creek Group of Permian age. Diorite is present as a small sill on Rose 2 claim.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Rose 1, 3, 4, 6 and 1 inch equals 200 feet covering Rose 2 and 5; self-potential survey, every 50 feet on two reconnaissance lines, 1.1 line-miles covering Rose 1 and 2; geochemical soil survey, 38 samples, 100 by 200-foot grid spacing, 0.7 line-mile covering Rose 1 and 2; trenching, 1,900 feet on Rose 2, 4, 6.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 97.

DONA (82L/SE-16) (Fig. A, No. 76)

LOCATION: Lat. 50° 08′ Long. 118° 24′ (82L/1W)
VERNON M.D. Twenty-five and one-half miles east-southeast of Lumby, 2 miles west of Keefer Lake, on the southern slope of the east end of Monashee Mountain, at approximately 5,000 feet elevation.

CLAIMS: DONA 1 to 17.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Gold, silver, lead, antimony.

DESCRIPTION: A diorite plug occurs in Cache Creek Group argillites and tuffs. Numerous narrow, irregular quartz veins in diorite and a few sporadic small pods of massive sulphides carry values in gold and silver. Overburden ranges from 10 to 14 feet.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Dona 1-6 and 1 inch equals 40 feet covering Dona 3-6; self-potential survey, 200-foot grid spacing with some fill-in at 100 feet, 3.8 line-miles covering parts of Dona 3-6; geochemical soil survey (miscellaneous fill-in samples and soil profiles along trenches), 50 samples covering Dona 3-6; percussion drilling, 19 holes totalling 3,216 feet on Dona 5 and 6; surface workings surveyed; road construction, 1 mile on Dona 3-6 plus 1,680 feet of bulldozer access road on Dona 5; trenching, 6,285 feet on Dona 3-6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 97; Assessment Report 5220.

FOX (82L/SE-20) (Fig. A, No. 73)

LOCATION: Lat. 50° 09′ Long. 118° 25′ (82L/1W)
VERNON M.D. Twenty-five miles east-southeast of Lumby, covering the headwaters of Yeoward Creek.

CLAIMS: FOX 1 to 21, DK 1 to 12.

OWNER: Harry Arnold.

OPERATOR: D. C. King, c/o 4416 – 25th Street, Vernon.

METALS: Gold, silver, lead, minor copper.

DESCRIPTION: The claims are underlain by argillite, andesite tuff, and minor quartzite and limestone, all of the Cache Creek Group. These rocks have been injected by quartz veins ranging in thickness from one-quarter inch to more than 4 feet. On Fox 16 a trench exposes minor chalcopyrite and pyrite disseminated in argillite and a 4-inch quartz vein carrying pyrite and galena. On Fox 15 a second trench exposes minor pyrite and chalcopyrite disseminated in tuff, and further west the tuff carries heavy pyrite and arsenopyrite. On Fox 17 an old shaft was sunk in a quartz vein, 4 to 8 feet wide, containing pockets of galena.

WORK DONE: 1973 – prospecting covering all claims; 1974 – linecutting, 7.8 miles of grid; geochemical soil survey, 197 samples taken at 200 by 400-foot grid spacing covering Fox 5, 7, 9, 15-21.

REFERENCES: Assessment Reports 5066, 5099.

ST. PAUL (TOUGHNUT, MINERVA) (82L/SE-10, 22) (Fig. A, No. 74)

LOCATION: Lat. 50° 09' Long. 118° 27' (82L/1W)
VERNON M.D. Twenty-three and three-quarter miles east-southeast of Lumby, extending down the north slope of Monashee Mountain to within one-quarter of a mile of Yeoward Creek, between 5,000 and 6,000 feet elevation.

CLAIMS: BLACK BESS, MINERVA, ZILPAH, TOUGHNUT (Lots 4186 to 4189) plus SNOWSHOE, SKB, SNOW.

OWNER: St. Paul Mines Ltd.

OPERATOR: COAST INTERIOR VENTURES LTD., 534, 789 West Pender Street, Vancouver.

METALS: Silver, gold, copper, zinc, lead, antimony, arsenic.

DESCRIPTION: Argillites and limestones of Upper Paleozoic to Upper Triassic age are intruded by sill-like bodies of altered diorite. Quartz vein stockworks with disseminations, stringers, lenses, and pods of various sulphides, sulpharsenides, and sulphosalts cut all rock types. Mineralization is disseminated in country rock.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet covering Toughnut and 1 inch equals 40 feet covering Minerva; underground geological mapping, 1 inch equals 40 feet covering Toughnut and Minerva; ground magnetometer survey, 1.23 line-miles, 50-foot grid spacing covering Toughnut; Toughnut claim surveyed; road construction, 7 miles upgraded between Yeoward Creek, Toughnut showings, and Minerva showings; trenching, 1,300 feet and stripping, 20,000 square feet on Toughnut and Minerva; bulk sampling, 340 tons on Toughnut; dewatering of St. Paul No. 4 adit (Toughnut).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 23, 98.

TOP (82L/SE-17) (Fig. A, No. 77)

LOCATION: Lat. 50° 04' Long. 118° 33' (82L/2E)
VERNON M.D. Twenty-two (incorrectly 10 in 1973) miles southeast of Lumby, astride Highway 6 and McIntyre Creek, about 1,500 feet west of McIntyre Lake.

CLAIMS: GOLD 1 to 10, TOP 1 and 2.

OWNER: E. O. Chisholm.

OPERATOR: NEW CINCH URANIUM LTD., 416, 25 Adelaide Street West, Toronto, Ont.

METALS: Gold, silver.

DESCRIPTION: Andesite is intruded by pink to cream-coloured massive granite. The granite is cut by a strong, persistent zone of shearing and brecciation which has been traced for over 550 feet and varies in width from 1 foot to over 40 feet. Pyrite, arsenopyrite, and sulphosalts, carrying gold and silver values, occur in fault gouge, quartz, carbonate, and intensely altered granite in the shear zone.

WORK DONE: Surface diamond drilling, four BQ holes totalling 1,004 feet on Gold 2, 3, and 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 98; Assessment Report 4946.

ALFY, BEAR (82L/SW-5, 9; 82E/NW-7) (Fig. A, No. 79)

LOCATION: Lat. 50° 00' Long. 119° 46' (82L/4W; 82E/13W)
VERNON and NICOLA M.D. Fifteen and one-quarter miles west of Winfield, covering the western half of Whiterocks Mountain, from Tadpole Lake to Dobbin and Islaht Lakes and the head of Bit Creek, at approximately 5,500 feet elevation.

CLAIMS: ALFY 1 to 18, POP 1 to 10, BEAR 1 to 18, 20, 21, 24 to 36, 46 to 53, BEAR 19, 22, and 23 Fractions, CHARLIE 1 to 16.

OWNERS: Alfred Brewer, Stanley Brewer, and David Jourdain.

OPERATOR: ROCKET MINES LTD., 203, 422 Richards Street, Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization occurs in pyroxenites and gabbro.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Alfy 1, 2 and 5, 6; topography mapped; trenching on Alfy 1-4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 406.

RUBY (82L/SW-65) (Fig. A, No. 80)

LOCATION: Lat. 50° 27' Long. 119° 41' (82L/5E)
KAMLOOPS M.D. Six miles west-southwest of Falkland, approximately 1,000 feet south of Highway 97 and 1,500 feet east of Ingram Creek.

CLAIMS: OPAL, TOPAZ, RUBY, PEARL.

OWNER: Elizabeth Marzoff.

OPERATORS: L. JONES and M. J. MARZOFF, RR 2, Vernon.

METAL: Copper.

DESCRIPTION: Feldspar porphyry intrudes Cache Creek Group sedimentary rocks. Native copper, pyrite, and chalcopyrite occur on fractures.

WORK DONE: Surface diamond drilling, two AX holes totalling 321 feet on Pearl and Opal.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1967, p. 136; Assessment Report 5272.

BLUE JAY (82L/SW-22, 24, 30) (Fig. A, No. 81)

LOCATION: Lat. 50° 17' Long. 119° 17' (82L/6W)
VERNON M.D. Extending north from the northwest side of the Vernon municipal boundary, along the west side of the ditch, to Okanagan Indian Reserve 1.

(82L/6E)

CLAIMS: LM 1 to 4, ML 1 to 8, MACK 1 and 2 Fractions, plus BLUE JAY (Lot 738).

OWNER: M. P. Stadnyk.

OPERATOR: LAURA INDUSTRIES & RESOURCES LTD., 302, 717 West Pender Street, Vancouver V6C 1G9.

METALS: Gold, copper, silver, lead, zinc.

DESCRIPTION: Andesite lava and tuff are cut by a 4-foot quartz vein which dips 55 to 65 degrees east and contains crushed pyrite and galena along its footwall.

WORK DONE: Linecutting and magnetometer survey, 13.7 line-miles covering Blue Jay, ML 1-8, Mack 1 and 2 Fractions, LM 2, 4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1930, p. 208 (Jumbo), 1934, p. D32; 1952, p. 41 (Royal); Assessment Report 4960.

MOUNT VERNON (82L/SW-8) (Fig. A, No. 82)

LOCATION: Lat. 50° 17′ Long. 119° 10′ (82L/6E)
VERNON M.D. Three miles east of Vernon, covering Vernon Hill from Brookside Creek to Becker Lake, at approximately 3,000 feet elevation.

CLAIMS: DCK, ANNE, DENYSE, DAKOTA, SILVER STREAK, GOLD, COPPER, WCR, X, totalling approximately 117.

OWNER: KING GRAYBARR MINES LTD., Box 904, Vernon.

METALS: Lead, zinc, copper, silver, gold, molybdenum.

DESCRIPTION: Copper, molybdenum, and pyrite occur in a well-fractured diorite. Argillite and schist contain quartz veins.

WORK DONE: Surface diamond drilling, five holes totalling 1,700 feet on Silver Streak 511570, 511569, Copper 652181, 652179, Dakota 992; stripping, 5 by 20 by 600 feet on DCK 29 and 38.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 101; Assessment Report 5003.

CHAPUT (82L/SE-6) (Fig. A, No. 78)

LOCATION: Lat. 50° 16′ Long. 118° 57′ (82L/7W)
VERNON M.D. Extending north from the northeast corner of the Lumby municipal boundary, on both sides of Bessette Creek, at approximately 2,500 feet elevation.

CLAIMS: CHAPUT 1 to 24, BEE 1 to 8, FOX 1, 2, 4, 7, 8, 10, GAIL 1.

OWNERS: Wallace Chaput, Edward Chaput, and S. Kostiuk.

OPERATOR: ALBERTA GYPSUM LTD., 615, 330 Ninth Avenue SW., Calgary, Alta. T2P 1K7.

METALS: Lead, zinc, gold, silver, copper.

DESCRIPTION: A vein deposit with quartz, galena, argentite, sphalerite, minor chalcopyrite, pyrite, and pyrrhotite, occurs in formations of the Monashee Group and in younger metamorphosed sedimentary rocks of Carboniferous age.

WORK DONE: Trenching, 3,000 feet on Chaput 1, 2, 6, 8-10, 20, 21 and Gail 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 298.

(82L/10E)

KINGFISHER, BRIGHT STAR (82L/NE-4 to 9) (Fig. A, No. 85)

By T. Hoy

LOCATION: Lat. 50° 44′ Long. 118° 44′ (82L/10E)
VERNON M.D. Twelve and three-quarter miles southeast of Sicamous, extending east from Kingfisher Creek to its east fork, 2 miles above their confluence, between 1,900 and 2,900 feet elevation.

CLAIMS: FC 1 to 13, FX 2 to 22, 24, 25, EX 1 to 7, BX 1 to 6, M 1 to 9.

OWNER: COLBY MINES LTD., 100, 885 Dunsmuir Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION:

INTRODUCTION: Field work for this report consisted of one and one-half days in October 1974. The writer wishes to acknowledge the cooperation provided by personnel of Colby Mines Ltd. while in the field, particularly of J. O'Neil and of M. McCormick, president of Colby Mines Ltd., in releasing maps and reports to the writer. This report is based in part on assessment reports submitted to the British Columbia Department of Mines and Petroleum Resources by Cominco Ltd., by Bright Star Trio Mining Ltd., and by Colby Mines Ltd.

HISTORY OF EXPLORATION: The original showings in the area of Colby's property were discovered in 1963 by W. C. Rotar of the Bright Star Trio Syndicate, Vernon. The 'King' showings to the northeast were located by The Consolidated Mining and Smelting Company of Canada, Limited (Cominco Ltd.).

During 1964, diamond drilling and bulldozer trenching were done on the Bright Star property by Sheep Creek Mines Limited. Six diamond-drill holes, totalling 642 feet, were drilled before the option on the property was dropped. In the fall of 1964, R. G. Gifford of Cominco mapped and conducted a magnetometer survey on the Bright Star and Kingfisher claims.

In 1965 Dakota Silver Mines Ltd. located claims just west of the Bright Star claims. Several trenches were blasted on the property and two westerly inclined holes were drilled toward the trenched area.

From 1965 to 1973, work on the Bright Star-Kingfisher property consisted of trenching, some diamond drilling, and a magnetometer survey and soil sampling programme conducted for the Bright Star Trio Mining Ltd.

Colby Mines Ltd. located 34 claims over the original Bright Star property in 1973 (FX and FC claims) and subsequently extended their property to include over 130 claims to cover the original Kingfisher and Dakota claims (Fig. 10).

Work by Colby Mines Ltd. during 1973 and the early part of 1974 was concentrated on the Bright Star showings. This work included geological mapping by E. O. Chisholm in the summer of 1973, approximately 5,600 feet of diamond drilling in the fall of 1973, and electromagnetic and magnetometer surveys in March 1973. Further trenching in August and September of 1974 led to the discovery of lead-zinc mineralization 500 to 700 feet east and downslope of the original Bright Star showings. These new showings are in a nearly pure marble layer striking north-northeast and dipping to the east. This discovery led to the staking in October and November of approximately 250 claims in the immediate area.

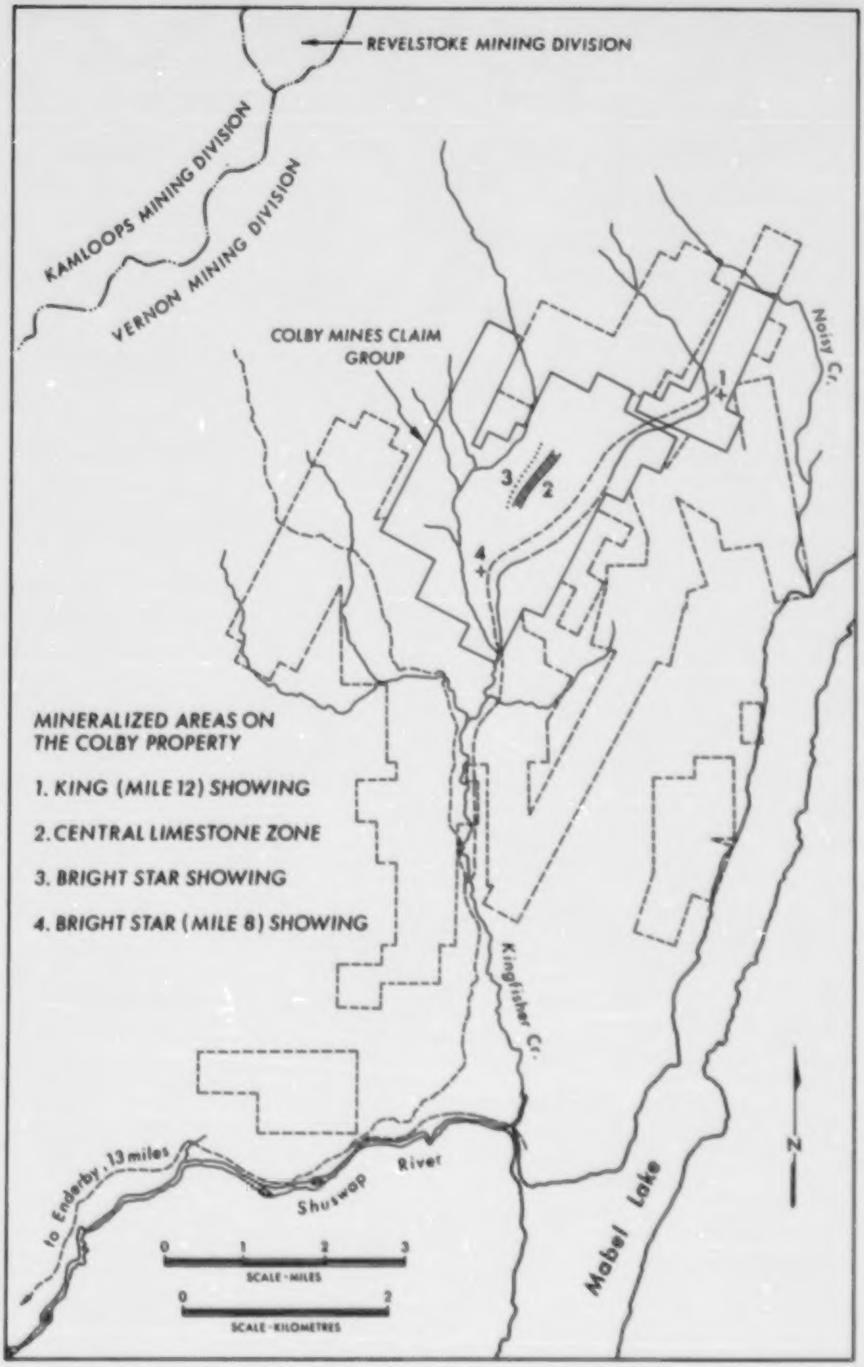

REVELSTOKE MINING DIVISION
KAMLOOPS MINING DIVISION
VERNON MINING DIVISION
COLBY MINES CLAIM GROUP
Noisy Cr.
1
2
3
4
MINERALIZED AREAS ON THE COLBY PROPERTY
1. KING (MILE 12) SHOWING
2. CENTRAL LIMESTONE ZONE
3. BRIGHT STAR SHOWING
4. BRIGHT STAR (MILE 8) SHOWING
Kingfisher Cr.
N
to Enderby, 13 miles
Shuswap River
Mabel Lake
0 1 2 3
SCALE - MILES
0 2
SCALE - KILOMETRES

Figure 10. Location of mineral claims and mineral showings, Mabel Lake area, Colby Mines Ltd.

The new zone, termed the 'central limestone zone,' has been partially exposed by trenching a length of approximately 2,000 feet. Seven packsack-drill holes, averaging 50 to 70 feet in depth, have explored three mineralized areas spaced 700 to 800 feet apart along the strike of the zone. Each hole encountered at least one mineralized section, the largest being 20 feet in width with grades ranging from 2 to 10 per cent zinc.

GEOLOGY: The area of the Colby Mines Ltd.'s property is within the Shuswap Complex, a belt of high-grade metamorphic rocks in the Columbian Orogen of southeastern British Columbia. The area has been mapped on a regional scale by Jones (1959) and is on the eastern edge of a large area studied by Okulitch (1974). These authors assign rocks in the area to the Monashee Group, a heterogeneous package of rocks of probable Proterozoic age and Early Paleozoic age comprising granitoid gneiss, augen gneiss, sillimanite schist, and prominent marble and quartzite layers.

Rocks in the area of the property have been divided into three units: an eastern unit comprising quartz-feldspar-biotite gneiss, hornblende gneiss, and biotite schist; a central unit comprising marble and calc-silicate gneiss, with minor quartzite and biotite gneiss; and a western unit comprising quartzite, calc-silicate gneiss, and some biotite-quartz-feldspar gneiss. These units strike north-northeast and generally dip toward the east.

The rocks have been metamorphosed to the amphibolite facies of regional metamorphism. Sillimanite is common within the biotite gneiss and the assemblage calcite-quartz-diopside is common in the calc-silicate gneisses. Quartz feldspar sills and dykes are common throughout the area and fine-grained light grey quartz feldspar porphyry dykes and garnet-bearing aplite dykes are less common.

The area is structurally complex. In general, mineral foliation is parallel to layering, striking north-northeast. Dips vary from low angles to the east to steeply to the west. The most conspicuous structures are a set of west-northwest-trending upright faults which have offset the north-striking units. These faults are indicated by air photograph lineaments and commonly have a right lateral displacement of several hundred metres.

LEAD–ZINC MINERALIZATION: Sulphide mineralization is restricted to the central marble unit and associated calc-silicate gneisses and quartzites.

Within the marble unit, mineralization consists of disseminated dark sphalerite and pyrrhotite associated with minor amounts of pyrite and traces of galena, concentrated in a number of distinct but discontinuous zones. These zones occur near the centre of the claim group (the central limestone zone) and at both the northern and southern extensions of the marble unit (the 'King' and 'Mile 8' showings, Fig. 10). They parallel the layering within the marble and vary in thickness from approximately 2 to 20 feet. Their continuity along strike has not been determined. Zinc grades within these zones range from approximately 2 to 10 per cent, and average 5 to 7 per cent; lead grades are appreciably lower, generally less than 1 per cent.

Sphalerite and pyrrhotite, with minor pyrite and galena, also occur within the biotite-quartzite and calc-silicate gneiss west of the marble unit (the 'Bright Star' showings). Sulphides are disseminated in the quartzite and also occur as irregular patches surrounding and within coarse-grained diopside and quartz grains in the calc-silicate unit. As well, coarse-grained sulphides are concentrated around quartz fragments in a breccia zone cutting through the quartzite gneiss unit. In general, combined lead-zinc values are lower in the quartzite and calc-silicate unit than in the marble unit, although the lead-zinc ratios may be appreciably higher.

(82L/12E)

WORK DONE: 1973 and early 1974 – linecutting, magnetometer survey, and altimeter survey, 7 line-miles; linecutting and electromagnetic survey, 2.9 line-miles; surface geological mapping, 1 inch equals 100 feet and 50 feet; surface diamond drilling, 25 holes totalling 5,604 feet on FX 2, 3, 21, and 22; 1974 – surface geological mapping, 1 inch equals 100 feet; ground magnetometer survey, 100-foot grid spacing, more than 6.8 line-miles; and geochemical soil survey, 100-foot grid spacing, more than 6.8 line-miles covering FX 2, 3, 21, 22 and three other groups in the north and south parts of the property; packsack drilling, five holes; road construction, 2 miles; trenching, 250 feet; stripping, 1,500 by 300 feet.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1964, p. 105; 1965, p. 165; 1968, p. 222; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 298; Jones, A. G., 1959, Vernon Map-area, British Columbia, *Geol. Surv., Canada*, Mem. 296; Okulitch, A. V., 1974, Stratigraphy and Structure of the Mount Ida Group, Vernon (82L), Seymour Arm (82M), Bonaparte Lake (92P), and Kettle River Map-areas, British Columbia, *Geol. Surv., Canada*, Paper 74-1, Pt. A, pp. 25-30; Assessment Reports 578, 579, 2169, 4933, 4934, 4945.

BUDGET (82L/NW-35) (Fig. A, No. 83)

LOCATION: Lat. 50° 34′ Long. 119° 35′ (82L/12E)
KAMLOOPS M.D. Four and one-half miles north of Falkland, 16 miles southwest of Salmon Arm, extending from Arthur Creek to Blair Creek, about 1,000 feet east of Joyce Lake.

CLAIMS: BUDGET 1 to 42.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, Box 1500, Asbestos, P.Q.

METALS: Copper, zinc, silver, lead.

DESCRIPTION: The claims are underlain by Cache Creek Group quartzite, quartz-sericite schist, and andesite, irregularly intruded by small stocks, sills, and dykes ranging in composition from quartz diorite to pyroxenite. All rocks are intensely altered. Chalcopyrite and malachite fill fractures and are disseminated in andesite and quartz-sericite schist.

WORK DONE: Geochemical survey, 212 samples covering Budget 29, 30, 42; percussion drilling, 15 holes totalling 2,015 feet on Budget 29, 30, 42; road construction, 1,500 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 102; Assessment Report 4975.

PEM, HY (Fig. A, No. 84)

LOCATION: Lat. 50° 48′ Long. 119° 58′ (82L/13W)
KAMLOOPS M.D. Twelve miles west of Chase, extending east from Hyas Lake and north to Shaw Hill.
Lat. 50° 47′ Long. 119° 58′ (82L/13W)

(82M/3E)

KAMLOOPS M.D. Twelve miles west of Chase, covering Warren and Pemberton Lakes plus the head of Paul Creek.

CLAIMS: HY 1 to 26, 29, 30, PEM 1 to 8, 10, 12, 13, 15, 17, 27 to 32, 34, 36, 41 to 49, HELLO 1 to 4.

OWNER: DRESSER INDUSTRIES, INC., Minerals Division, 525, 404 Sixth Avenue SW., Calgary, Alta.

DESCRIPTION: Limy sedimentary rocks contain minor pyrite.

WORK DONE: Surface diamond drilling, one BQ angle hole totalling 591 feet on Hy 7.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 103; Assessment Report 4944.

SEYMOUR ARM 82M

SAUL (FLUKE) (82M-105) (Fig. A, No. 86)

LOCATION: Lat. 51° 03' Long. 119° 15' (82M/3E)

KAMLOOPS M.D. Eighteen and one-half miles southwest of the settlement of Seymour Arm, on the north slope of Crowfoot Mountain, at approximately 5,600 feet elevation.

CLAIMS: FLUKE 7 and 8.

OWNER: RESOURSEX LTD., c/o 303 Wildwood Drive SW., Calgary, Alta.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: The claims are underlain mainly by chlorite schist. Two quartz veins carrying erratic pyrite and galena cut the schists on Fluke 8. The north vein is 40 feet long, 4 inches wide, strikes 085 degrees, and dips 85 degrees south. The south vein is inferred to continue over a length of 115 feet and to have a width of 8 to 12 inches; it strikes 065 degrees. A large quartz vein on Fluke 7 is apparently barren.

WORK DONE: Prospecting; sampling veins.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1964, p. 99; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 85; Assessment Report 5133.

CU (82M-138, 139) (Fig. A, No. 88)

LOCATION: Lat. 51° 00' Long, 119° 31' (82M/4E)

KAMLOOPS M.D. Twenty-nine miles southwest of the settlement of Seymour Arm, on Adams Plateau, between the headwaters of Bowler and China Creeks.

CLAIMS: CU 1 to 8.

OWNER: ORELL COPPER MINES LTD., Box 457, Salmon Arm.

METALS: Copper, silver, lead, zinc, iron.

DESCRIPTION: The claims are underlain by interbedded phyllites and greenstone of the Eagle Bay Formation. On CU 1 and 2 galena and sphalerite are in places finely disseminated in siliceous phyllite. On CU 3 and 4 there are several exposures of pyrrhotite in siliceous phyllite, accompanied by some magnetite and minor chalcopyrite. On CU 5 and 6 there are several lenses or bands of massive magnetite.

WORK DONE: 1973 and 1974 – prospecting of CU 1-6.

REFERENCE: Assessment Report 5132.

ORO (82M-140) (Fig. A, No. 89)

LOCATION: Lat. 51° 04′ Long. 119° 31′ (82M/4E)
KAMLOOPS M.D. Twenty-seven and one-half miles southwest of the settlement of Seymour Arm, on Adams Plateau, 4,000 feet east of Nikwikwaia Creek, at approximately 5,500 feet elevation.

CLAIMS: ORO 1 to 6.

OWNER: ORELL COPPER MINES LTD., Box 457, Salmon Arm.

METAL: Copper.

DESCRIPTION: Thinly bedded phyllites contain some chalcopyrite and are cut by andesite and hornblende porphyry dykes.

WORK DONE: 1973 – surface diamond drilling, one AQ hole totalling 400 feet on Oro 4.

REFERENCE: Assessment Report 4932.

EX NO. 1 (82M-17) (Fig. A, No. 87)

LOCATION: Lat. 51° 04′ Long. 119° 32′ (82M/4E)
KAMLOOPS M.D. Twenty-eight and one-half miles southwest of the settlement of Seymour Arm, on Adams Plateau, immediately west of Nikwikwaia Creek, 1 mile south of Gilfrid Lake.

CLAIMS: SPAR 1 and 2.

OWNER: GEORGE KACHUK, Box 1229, Salmon Arm.

METALS: Lead, zinc, silver, minor copper.

DESCRIPTION: Essentially there are galena-sphalerite veins in a quartz-carbonate gangue in paraschists and gneisses of Late Paleozoic age.

WORK DONE: Prospecting of Spar 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 85; Assessment Report 5176.

HOMESTAKE (82M-25) (Fig. A, No. 90)

LOCATION: Lat. 51° 07′ Long. 119° 50′ (82M/4W)
KAMLOOPS M.D. Two and three-quarter miles northwest of the head of Skwaam Bay on Adams Lake, on Sinmax and Homestake Creeks, immediately north of the road, at approximately 2,240 feet elevation.

CLAIMS: HOMESTAKE, MAPLE LEAF, TROUBLESOME, ARGENTUM (Lots 827 to 830), SILVER STAR NO. 1 FR. (Lot 4566) plus MAX 12 to 15, 24 to 27, 38 to 41, KAM 1 to 24, H 1 Fraction, H 2 to 32, DELL 1 to 4, FRED Fraction, FRED 1 and 2, RAY Fraction.

OWNERS: Kamad Silver Co. Ltd. and Canadian Reserve Oil and Gas Ltd.

OPERATOR: CANADIAN RESERVE OIL AND GAS LTD., 1600, 639 Fifth Avenue SW., Calgary, Alta. T2P 0M9.

METALS: Barite, lead, zinc, silver, copper, antimony.

DESCRIPTION: Three main zones of mineralization occur as veins having an approximate dip of 28 degrees northeast. All contain barite, silver, tetrahedrite, chalcopyrite, galena, and sphalerite with minor gold values. The rocks in the area are members of the Adams Lake series of the Shuswap Complex. In the vicinity of the mine, the main member is a quartz-sericite-talc schist. Bands of argillites overlay the sericite at higher elevations. Chloritic beds are present in the general vicinity.

WORK DONE: Raise, 440 feet on Troublesome (Lot 829).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 114.

EBL-REM (82M-51) (Fig. A, No. 92)

LOCATION: Lat. 51° 19' Long. 119° 47' (82M/5W)
KAMLOOPS M.D. Twenty miles south-southeast of the Canadian National Railway flagstop of Birch Island, extending north from East Barriere Lake, from three-quarters of a mile west of the east end of the lake, between 2,100 and 4,000 feet elevation.

CLAIMS: EBL, REM, SNARK, BL, BRAD, totalling approximately 107.

OWNERS: J. Gourlay, G. Moore, and R. Tilston.

OPERATOR: WESTERN MINES LIMITED, Box 8000, Campbell River.

METAL: Copper.

DESCRIPTION: The rocks are Upper Paleozoic Cache Creek Group metavolcanic and metasedimentary rocks. Chlorite schists and argillites contain quartz-calcite stringers.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering EBL 16; magnetometer survey, approximately 1 line-mile, 400 by 100-foot grid spacing covering EBL 16-18 and Rem 1-6; surface diamond drilling, six holes totalling 2,907 feet on EBL 16, 18, 32 and Rem 5; linecutting; road construction, one-third mile on EBL 18 and Rem 5.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 115.

ENARGITE (Fig. A, No. 91)

LOCATION: Lat. 51° 21' Long. 119° 59' (82M/5W)
KAMLOOPS M.D. Seventeen and one-half miles south of the Canadian National Railway flagstop of Birch Island, extending south from Birk Creek.

CLAIMS: ENARGITE 1 to 40.

OWNER: KAM CREED MINES LTD., 202, 225 Tranquille Road, Kamloops.

WORK DONE: 1973 – linecutting, 55 lines of grid covering all claims.

REFERENCE: Assessment Report 5039.

FOGHORN, GOPHER (82M-29, 40, 108) (Fig. A, No. 94)

LOCATION: Lat. 51° 32′ Long. 119° 57′ (82M/12W)
KAMLOOPS M.D. Four and one-half miles south of the Canadian National Railway flagstop of Birch Island, extending down the northeast side of Foghorn Mountain, from 6,000 to 6,500 feet elevation.

CLAIMS: FOG HORN, FOG HORN 1 to 5, 7, 8.

OWNER: M. Fennell.

OPERATORS: S. FENNELL and M. FENNELL, Box 249, Barriere.

METALS: Silver, lead, zinc.

DESCRIPTION: Chlorite-sericite schist of the Fennell Formation is injected by numerous quartz veins. Some veins contain galena, sphalerite, chalcopyrite, argentite, pyrite, and pyrrhotite.

WORK DONE: 1973 – surface geological mapping, 1 inch equals 50 feet; grab and chip sampling covering Fog Horn and Fog Horn 3.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1924, pp. 150, 151; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 302; *Geol. Surv., Canada,* Sum. Rept., 1930, Pt. A, pp. 143, 144; Assessment Report 4876.

HAIL, GOOF, SUE (82M-7, 9) (Fig. A, No. 93)

LOCATION: Lat. 51° 32′ Long. 119° 49′ (82M/12W, 5W)
51° 29′ 119° 48′
KAMLOOPS M.D. Five and three-quarter miles southeast of Birch Island, covering the headwaters of Jones, Baker, and Harper Creeks, at approximately 5,300 feet elevation. The MUF claims are 1 mile further south, to the east of Harper Creek.

CLAIMS: GOOF, SUE, BETH, HARP, LEO, JUDY, HAIL, KARINA, BOB, MUF, totalling approximately 339.

OWNERS: QUEBEC CARTIER MINING COMPANY and NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver V6B 3T5.

METALS: Copper, zinc, lead.

DESCRIPTION: The claims are underlain by a succession of Permian or earlier low-grade metamorphic rocks including fine-grained phyllitic green schist, fine-grained graphitic marble and impure limestone, dark green phyllite, and fine-grained sericitic quartzite. The Cretaceous Baldy batholith lies a short distance south. Chalcopyrite and pyrite with sparse sphalerite and galena occur in quartz lenses in schist. Sulphides also occur as disseminations and as small veins and replacements in schist and phyllite.

WORK DONE: Scattered follow-up mapping on new logging roads.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 116.

PEAK (Fig. A, No. 95)

LOCATION: Lat. 51° 53' Long. 119° 32' (82M/13E)
KAMLOOPS M.D. Eleven and one-half miles northwest of the Avola post office, 2.5 miles east of the confluence of Raft River and Richie Creek, at approximately 5,000 feet elevation.

CLAIMS: PEAK 1 to 27.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver V7X 1M8.

DESCRIPTION: Gneisses and recrystallized limestone occur near a fine-grained diorite intrusive plug. Pegmatites are common in the metasedimentary rocks.

WORK DONE: Airborne electromagnetic and magnetometer survey, 600-foot grid spacing and geochemical stream sediment survey, 32 samples covering Peak 1-27.

CK (82M-137) (Fig. A, No. 96)

LOCATION: Lat. 51° 56' Long. 119° 35' (82M/13E)
KAMLOOPS M.D. Fourteen miles northwest of the Avola post office, extending north from Raft River, one-half mile north of its confluence with Richie Creek, at approximately 3,500 feet elevation.

CLAIMS: CK 1 to 80, LAKE 1 to 22, NORTH 1 to 76, PEAK 28 to 56, ULO 1 to 4, RAFT 1 to 40.

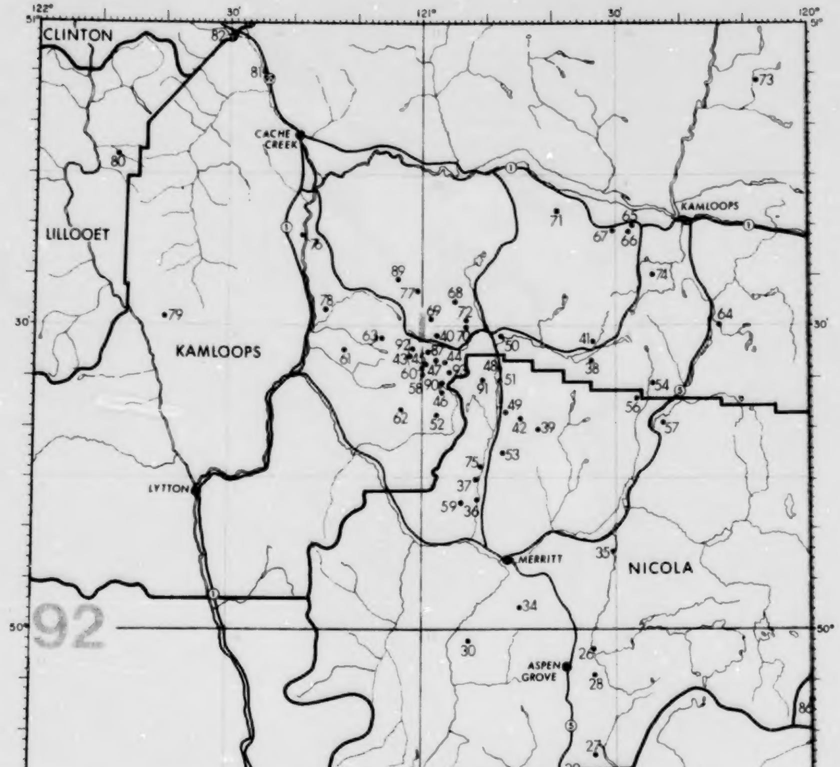
OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver V7X 1M8.

METALS: Zinc, lead.

DESCRIPTION: Bedrock consists of alternating sequences of pegmatite and biotite gneiss. Sphalerite and galena occur as disseminations in gneiss and in a carbonate bed. Glacially transported boulders of massive sphalerite in quartz-rich sedimentary rocks occur on CK 3 and 50. There is a trace of sphalerite in limestone on North 57.

WORK DONE: Claims surveyed; linecutting; surface geological mapping, 1 inch equals 400 feet covering CK 10, 24 and North 57; ground magnetometer survey, 3 line-miles, 400-foot grid spacing covering CK 5, 7, 9, 11, 19, 50; airborne electromagnetic and magnetometer survey, 565 line-miles, 600-foot grid spacing covering CK 1-60 and Raft 1-40; geochemical soil survey, 2,000 samples, 400-foot grid spacing, 40 line-miles covering CK 1-60 and Raft 1-15, 19-34 and 1,000 samples, 800-foot grid spacing, 20 line-miles covering Lake 1-22, North 37-46, 55-68, ULO 1-4, and CK 69-72; geochemical stream sediment survey, 120 samples covering Peak 23-56 and North 1-76; surface diamond drilling, seven holes totalling 1,268 feet on CK 3, 13, and 50; road construction, 1 mile on CK 3, 13, and 50.

REFERENCES: Assessment Reports 5189, 5192.


CLINTON
CACHE CREEK
LILLOOET
KAMLOOPS
LYTTON
MERRITT
NICOLA
ASPEN GROVE
NEW WESTMINSTER
SIMILKAMEEN
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60

Figure B. Index map of properties in NTS Grid Division 92H and 92I.

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HOPE 92H

HOLT, DAVIS (Fig. B, No. 1)

LOCATION: Lat. 49° 12′ Long. 120° 28′ (92H/1W)
SIMILKAMEEN M.D. Twenty miles south of Princeton, 6 miles east of Highway 16 and 4.5 miles northwest from Placer Mountain, at approximately 5,000 feet elevation.

CLAIMS: HOLT 11 to 20, DAVIS 1 to 20.

OWNER: CASCADIA RESOURCES LTD., 109, 1880 Greer Street, Vancouver.

DESCRIPTION: The claims are underlain by volcanic rocks of the Nicola Group of Late Triassic age.

WORK DONE: Linecutting and magnetometer survey, 20 line-miles and geochemical soil survey, 212 soil samples taken at 400-foot centres covering Holt 11-20 and Davis 9-20.

REFERENCE: Assessment Report 4986.

TAN (92H/SW-85) (Fig. B, No. 10)

LOCATION: Lat. 49° 01′ Long. 121° 48′ (92H/4W)
NEW WESTMINSTER M.D. Ten miles southwest of Vedder Crossing, on Tamihi Creek, at approximately 2,100 feet elevation.

CLAIMS: TAN 1 to 14, 17 to 50, SO 1 to 9, AX 1 to 6.

OWNERS: G. Stapley and W. Bell.

OPERATOR: GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD., 736 Eighth Avenue SW., Calgary T2P 1H4.

METALS: Copper, zinc.

DESCRIPTION: The claims are underlain by a lower rhyolitic sequence and an upper andesitic sequence both part of the Chilliwack Group. Pyrite is commonly disseminated through the rhyolite and is locally accompanied by sphalerite and chalcopyrite.

WORK DONE: Linecutting and frequency-domain IP survey, 3.3 line-miles covering Tan 39-44, 47-49 and SO 1, 3, 9.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 124; Assessment Reports 4085, 4990.

HARRISON, LUCKY JIM (92H/SW-13) (Fig. B, No. 11)

LOCATION: Lat. 49° 19′ Long. 121° 57′ (92H/5W)
NEW WESTMINSTER M.D. Eight miles west of Harrison Hot Springs, on Chehalis River, at approximately 800 feet elevation.

CLAIMS: HARRISON, LUCKY JIM, BONANZA, JOY, DOROTHY, LH, POT, LYN, CHEHALIS, C, MZ, totalling 96.

(92H/5W)

OWNERS: Isaac Miller, Dorothy Miller, Zenith Mining Corporation Ltd., and Cominco Ltd.

OPERATOR: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Copper, zinc, lead, gold, silver.

DESCRIPTION: A sequence of volcanic breccias and tuffs is intruded by dacite porphyry and basalt dykes.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; surface diamond drilling, eight holes totalling 3,492 feet on Lucky Jim, Harrison 2 and 20, and C 8 Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 125-128; Assessment Report 5233.

LUV, STONEY (92H/SW-69) (Fig. B, No. 14)

LOCATION: Lat. 49° 22' Long. 121° 53' (92H/5W)
NEW WESTMINSTER M.D. The property is centred 6 miles northwest of Harrison Hot Springs, near Weaver Lake.

CLAIMS: LUV 27 to 52, STONEY 1 to 21, LM 1 to 8, TRIO 1 to 8, DS 1 to 8.

OWNER: AARON MINING LTD., 120, 890 West Pender Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: Andesite agglomerate is intruded by feldspar porphyry. The andesite contains pyrite and lesser amounts of sphalerite and chalcopyrite.

WORK DONE: Surface diamond drilling, three holes, 325 feet, 449 feet, and 176 feet on DS 2 and Stoney 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 129; Assessment Reports 4977, 5001.

SF (92H/SW-87) (Fig. B, No. 88)

LOCATION: Lat. 49° 25' Long. 121° 52' (92H/5W)
NEW WESTMINSTER M.D. Two miles west of Harrison Lake, between Cartmell and Simms Creeks, at approximately 2,000 feet elevation.

CLAIMS: SF 1 to 20.

OWNERS: William McCullagh and Swim Lake Mines Ltd.

OPERATOR: SWIM LAKE MINES LTD., 101, 535 Thurlow Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: SF 12 and 15 to 20 are underlain mainly by acidic to basic tuff and volcanic breccia of the Harrison Lake Formation. Subordinate andesite flows are extensively silicified, sericitized, and pyritized, and the pyrite is in part strongly oxidized.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering seven claims; linecutting, 9.3 miles of grid; geochemical survey, 431 soil samples taken at 100 by 400-foot grid spacing and 11 rock chip samples taken at random locations covering SF 5-20.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 130; Assessment Report 5340.

TOP (92H/SW-91) (Fig. B, No. 12)

LOCATION: Lat. 49° 27′ Long. 121° 59′ (92H/5W)
NEW WESTMINSTER M.D. At the northeast corner of Chehalis Lake, immediately southwest of Mount McRae, at approximately 4,000 feet elevation.

CLAIMS: TOP 10, 12, 14, 16 to 37, KAZAR 1 to 5.

OPERATOR: CHEVRON STANDARD LIMITED, Minerals Staff, 833, 355 Burrard Street, Vancouver V6C 2H3.

METALS: Lead, copper, (zinc).

DESCRIPTION: The claims are underlain by volcanic rocks of the Harrison Lake Formation. Pyroclastic rocks, ranging from rhyolite to andesite, predominate under most of the property, and wedges of andesite lava occur in the south. Top Creek follows a zone of shearing and apparent faulting. The rocks have been extensively silicified, epidotized, and pyritized. Blebs and narrow veins of galena, chalcopyrite, pyrrhotite, quartz, and calcite occur in the shear zone, in part associated with potassic alteration.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; linecutting and magnetometer survey, 27.8 line-miles, 100 by 500-foot grid spacing; geochemical soil survey, 615 samples taken at 200 by 500-foot grid spacing covering all claims.

REFERENCES: Assessment Reports 3491, 5307.

KU (Fig. B, No. 13)

LOCATION: Lat. 49° 29′ Long. 121° 59′ (92H/5W)
NEW WESTMINSTER M.D. Twenty-five miles north of Harrison Mills, 2 miles northeast of the north end of Chehalis Lake, at approximately 3,500 feet elevation.

CLAIMS: KU 1 to 38, KU 2 Fraction.

OWNER: Standard Oil Company of British Columbia Limited.

OPERATOR: CHEVRON STANDARD LIMITED, Minerals Staff, 833, 355 Burrard Street, Vancouver V6C 2H3.

METALS: Zinc, copper.

DESCRIPTION: Mineralization occurs as fragments of sphalerite and chalcopyrite in felsic volcanic rocks. The claims cover what is believed to be the conformable contact between the Harrison Lake Formation (andesitic to rhyolitic pyroclastic rocks) and the overlying Echo Island Formation (sedimentary rocks and dacitic tuffs).

WORK DONE: Magnetometer survey, 30 line-miles, 500 by 100-foot grid spacing covering all claims; geochemical soil survey, 7 line-miles, 500 by 100-foot grid spacing, 300 samples covering KU 31-38; geochemical rock sampling, 4 line-miles, varied grid, 116 samples.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 130; Assessment Report 5322.

VALLEY VIEW (92H/SW-15) (Fig. B, No. 83)

LOCATION: Lat. 49° 16′ Long. 121° 51′ (92H/5E)
NEW WESTMINSTER M.D. Three and one-half miles west of Agassiz, on the south side of Mount Agassiz, at approximately 1,000 feet elevation.

CLAIMS: NOREEN 1 to 8.

OWNER: GOLD-ANGEL RESOURCES INC., 315, 543 Granville Street, Vancouver.

METALS: Copper, silver, gold.

DESCRIPTION: Chalcopyrite and bornite and minor chalcocite are present in a gossan zone in metavolcanic rocks of the Cache Creek Group.

WORK DONE: Airborne magnetometer and electromagnetic survey, 15 line-miles, 500-foot grid spacing covering Noreen 1-8; built part of road to Noreen 1 and 2 and fixed bridge to property.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 264.

PRIDE OF EMORY MINE (92H/SW-4) (Fig. B, No. 84)

By P. A. Christopher and J. W. Robinson

LOCATION: Lat. 49° 28.3′ Long. 121° 29.9′ (92H/6W)
NEW WESTMINSTER M.D. At the head of Stulkawhits (Texas) Creek, which flows eastward into the Fraser River, 8 miles north of Hope.

CLAIMS: The property consists of 92 Crown-granted claims, two mineral leases (M-32 and M-33), and 56 unsurveyed mineral claims.

OWNER: GIANT MASCOT MINES LIMITED, 900, 837 West Hastings Street, Vancouver V6C 1C2.

METALS: Nickel, copper (production shown on Table 6).

DESCRIPTION:

HISTORY: The initial discovery on the Giant Mascot mine property (also called: Pride of Emory, B. C. Nickel, Pacific Nickel, Western Nickel, and Giant Nickel) was made in 1923 when Carl Zofka, a trapper, located outcrops of the Pride of Emory orebody on Emory Mountain. B.C. Nickel Company purchased the property in 1927 and conducted surface exploration until 1933. In 1933 B.C. Nickel Company was reorganized as B.C. Nickel Mines Limited by the Smith, Sloan, Spencer Syndicate. Refinancing permitted underground development on the 3550 (No. 1 tunnel) and 3275 (No. 2 or Chinaman tunnel) levels. By 1937 the Syndicate had spent $1,300,000 to develop 1.2 million tons of ore at 1.38 per cent nickel and 0.50 per cent copper. Four ore shipments, totalling 2,134 short tons grading 5 per cent nickel, were sent to Japan for test purposes and gross returns of $63,600 were obtained.

In 1938 B.C. Nickel Mines, Ltd. was reorganized as Pacific Nickel Mines Limited, but poor market conditions resulted in the property remaining idle until 1952 when Newmont Mining Corporation of Canada Limited and Pacific Nickel Mines Limited formed Western Nickel Mines Limited as an operating company. The property was further explored by establishing the 2600 (main haulage), 2950, and 3250 levels and connecting the levels with an internal inclined shaft. A favourable sales contract was arranged by Western Nickel and from January to July of 1958, under the management of The Granby Mining and Smelting Company Limited, 181,133 tons of ore was treated before market conditions forced closure.

In 1959 Newmont's interest in the property was sold to Giant Mascot Mines Limited and Giant Nickel Mines Limited was formed as an operating company. In March of 1961, Giant Mascot Mines Limited gained full control of the property by purchasing Pacific Nickel's 49 per cent interest. Giant Mascot reopened the mine as a salvage operation in July of 1959 and continued production until August 31, 1974.

From 1958 to closure, total production from 26 orebodies was approximately 4,700,000 tons of ore, containing 59,000,000 pounds of nickel and 28,000,000 pounds of copper. Average grade of mill heads for the Pride of Emory mine was about 0.77 per cent nickel and 0.33 per cent copper.

REGIONAL SETTING: Pyrrhotitic nickel-copper deposits are situated in an ultrabasic complex with chronologically and probably genetically related basic, dioritic, and noritic phases. The complex forms part of a 15-mile-wide, north-trending block of Late Paleozoic metamorphic rocks and Mesozoic intrusive rocks. The block is bounded on the east by the Fraser River fault zone and on the west by the Shuksan fault zone.

LOCAL GEOLOGY: Pipe-like mineral deposits occur within a segmented, crudely elliptical ultramafic complex about 1.5 miles in diameter. The stock-like mass contains pendants of metamorphosed Paleozoic rocks of the Chilliwack Group (?) and is in turn enclosed in younger granitic rocks considered to be part of the Spuzzum pluton. Potassium-argon ages from the ultramafic complex range from about 120 m.y. to 95 m.y. (J. McLeod, personal communication); the older ages were obtained from the hornblende pyroxenite phase with late hornblendite dykes having the youngest ages. All ages from the ultramafic complex are older than ages obtained from the Spuzzum pluton.

The complex contains a complete spectrum of ultramafic rocks. Pyroxenite and peridotite (generally hornblendic) are the most common rocks types and dunitic phases are rare. Hornblendite is often found adjacent to a granitic contact, prompting several investigators to suggest a metamorphic or metasomatic origin for these bodies.

Clark (1969) concluded that structure has played an important role in the control of orebodies and that the intersection of north 45 degrees west to north 50 degrees west striking faults and north 10 degrees west to north 30 degrees east striking faults exerts control over ore deposition. The four main fault trends recognized at the mine have the following strikes and dips:

(1) north 45 degrees west to north 50 degrees west; 50 to 70 degrees northeast

(2) north 15 degrees east to north 30 degrees east; 70 degrees southeast to 70 degrees northwest

(3) north 10 degrees west to north 10 degrees east; 55 degrees east to 55 degrees west

(4) north 30 degrees west to north 30 degrees east; 20 to 30 degrees east or west

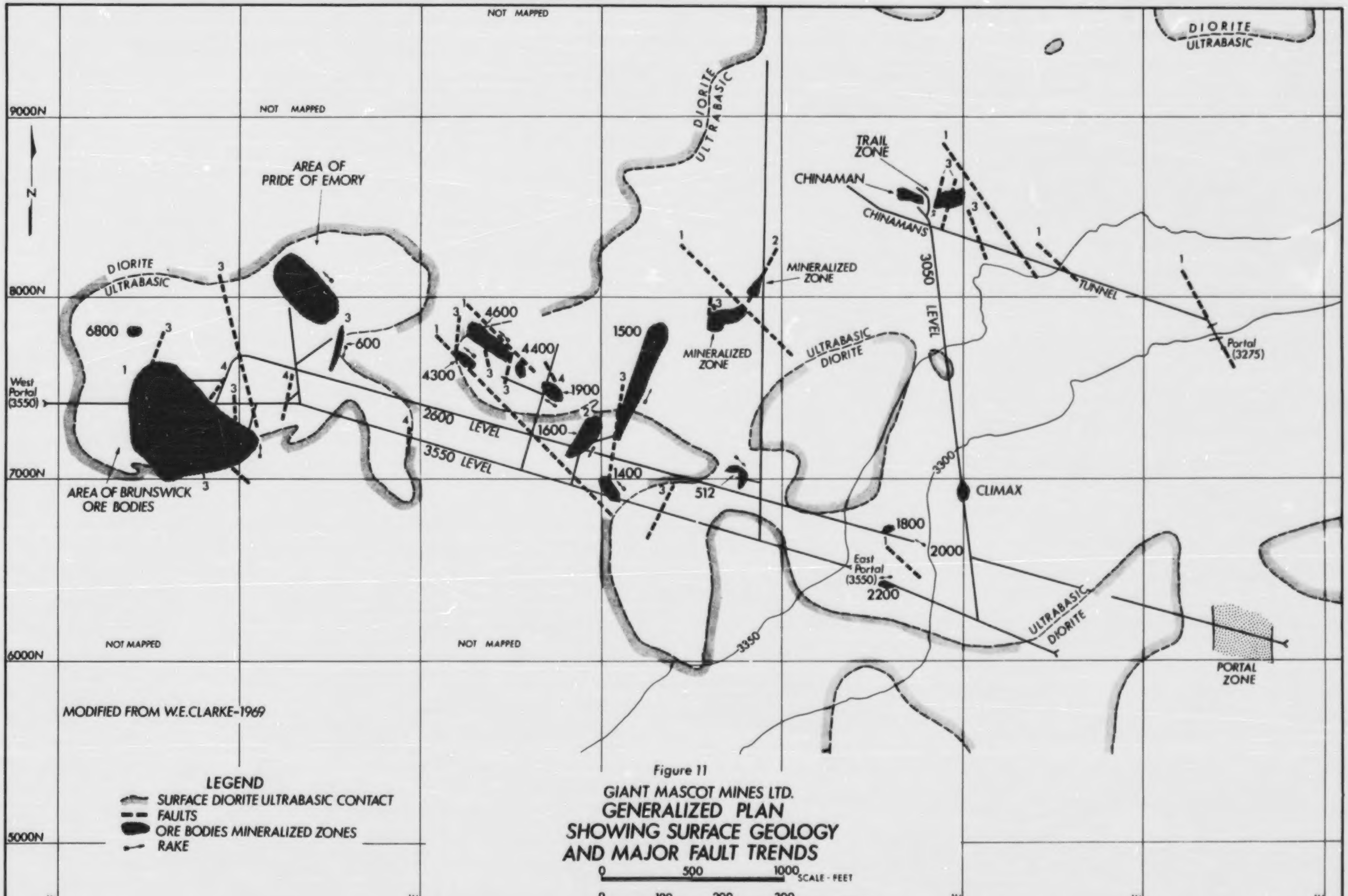

NOT MAPPED
DIORITE
ULTRABASIC
9000N
N
NOT MAPPED
TRAIL ZONE
CHINAMAN
CHINAMANS
TUNNEL
3050 LEVEL
AREA OF PRIDE OF EMORY
MINERALIZED ZONE
MINERALIZED ZONE
8000N
6800
600
4600
4400
4300
1900
1500
1600
1400
512
West Portal (3550)
2600 LEVEL
3550 LEVEL
ULTRABASIC
DIORITE
Portal (3275)
7000N
AREA OF BRUNSWICK ORE BODIES
CLIMAX
3300
1800
2000
East Portal (3550)
2200
3350
NOT MAPPED
NOT MAPPED
6000N
PORTAL ZONE
MODIFIED FROM W.E.CLARKE-1969
LEGEND
SURFACE DIORITE ULTRABASIC CONTACT
FAULTS
ORE BODIES MINERALIZED ZONES
RAKE
5000N
0
500
1000
SCALE - FEET
0
100
200
300
SCALE - METRES
2000E
4000E
7000E
8000E
9000E
1
2
3
4

Figure 11

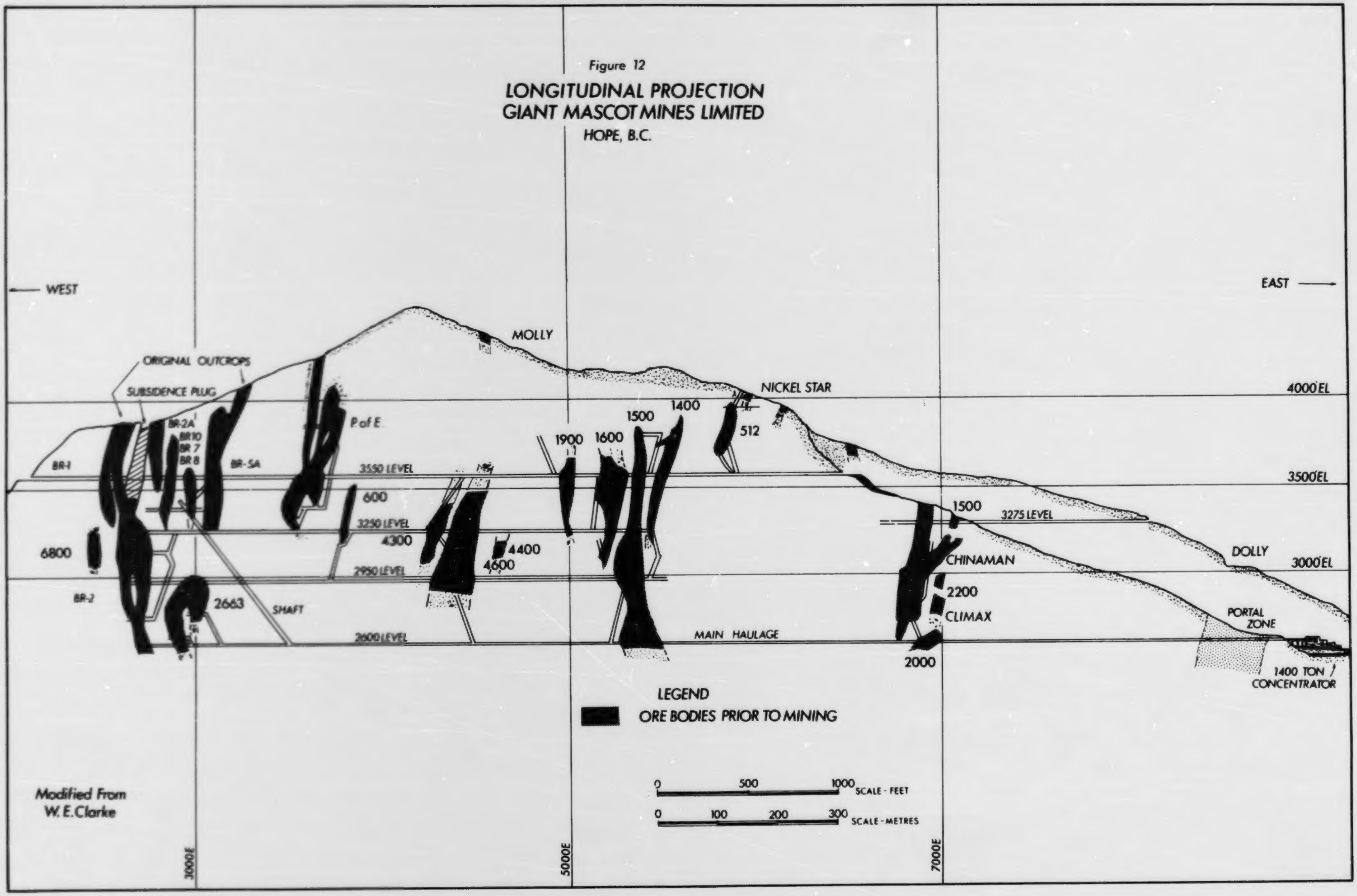
GIANT MASCOT MINES LTD.

GENERALIZED PLAN SHOWING SURFACE GEOLOGY AND MAJOR FAULT TRENDS

Figure 12

LONGITUDINAL PROJECTION
GIANT MASCOT MINES LIMITED

HOPE, B.C.


← WEST
EAST →
MOLLY
ORIGINAL OUTCROPS
SUBSIDENCE PLUG
BR-2A
BR10
BR 7
BR 8
BR-1
BR-5A
P of E
NICKEL STAR
4000'EL
1400
1500
512
1900
1600
3550 LEVEL
3500'EL
600
3250 LEVEL
1500
3275 LEVEL
4300
4400
4600
6800
CHINAMAN
DOLLY
3000'EL
2950 LEVEL
2200
CLIMAX
BR-2
2663
SHAFT
PORTAL ZONE
2600 LEVEL
MAIN HAULAGE
2000
1400 TON CONCENTRATOR
LEGEND
ORE BODIES PRIOR TO MINING
0
500
1000
SCALE - FEET
0
100
200
300
SCALE-METRES
3000E
5000E
7000E

Modified From W. E. Clarke

The first three sets appear to provide ground preparation and access for ore while the fourth group often displaces ore zones. Tectonic and intrusive breccia zones and agmatite are found to be spatially related to several orebodies and breccia fragments are found in some massive ores. The genetic relationship between breccia zones and ore deposits is not clear, but remobilization is apparent in some of the breccia ore.

Alteration appears to be closely related to structure and intrusive contacts and, therefore, is often associated with orebodies. Four main types have been recognized: (1) crumbly alteration (also called pervasive shearing), (2) talc - amphibole ± magnetite, (3) uralitization, and (4) hornblendization. Crumbly alteration is a descriptive term applied to breakdown of olivine grains to micaceous minerals (phlogopite and chlorite) and where intense, serpentine is formed. Crumbly alteration is generally restricted to peridotite or dunite and is often present as a partial envelope around orebodies. Talc - amphibole alteration is generally associated with intensely faulted or fractured bodies of pyroxenite and is often found adjacent to the ore zones. Although alteration is generally present as a partial envelope around orebodies, there is no established pattern that can be relied upon as an ore indicator.

Twenty-eight mineral deposits have been outlined within the main ultramafic mass (Figs. 11 and 12). Of these deposits, production has been obtained from 22, and five (4600, Pride of Emory, 1500, Brunswick 2, and Brunswick 5) accounted for two-thirds of the production. Pipe-like orebodies range from a vertical continuity of 1,200 feet to 100 feet and have horizontal sections ranging from 250 by 120 feet to 20 by 40 feet. The orebodies can be divided into three types: (1) zoned, in which sulphides are disseminated through one or more rock types and show gradational change in tenor (for example, Brunswick Nos. 1, 5, 6 and 4600, 1900, and 512), (2) massive, generally confined to fault or contact zones and having sharp contacts (for example, Pride of Emory and Brunswick Nos. 2, 8, and 9), (3) vein, narrow tabular bodies that may enrich an ore zone but have limited tonnage potential.

A summary of 26 mineral deposits at the Pride of Emory mine is presented in the following tables.

WORK DONE:

From January 1, 1974 to August 31, 1974 about 170 men worked at the Pride of Emory mine. During this period 156,733 short dry tons of ore averaging 0.68 per cent nickel and 0.27 per cent copper was delivered to the mill. This ore was milled to produce 6,990 tons of nickel concentrate and 1,117 tons of copper concentrate.

During the year 94,758 feet of diamond drilling, 206 feet of drifts and crosscuts, and 298 feet of raises were completed.

The known reserves in the mine were contained in the Climax and Chinaman orebodies. These reserves were depleted and were not replaced by new discoveries. Following the cessation of production from the mine, the plant was cleaned up, the portable cookhouse and bunkhouse accommodations were removed from the property, and the permanent buildings were winterized.

Shortly after production was terminated, a new high-grade ore zone was discovered on the Emory Creek slope while a logging road was being constructed. After completing 2,867 feet of diamond drilling, the company reported that the mineralized zone appeared

SUMMARY OF MINERAL DEPOSITS

Name	Dimensions (ft.) Horizontal	Dimensions (ft.) Vertical	Tons x 1,000	Grade Ni	Grade Cu	Ni/Cu	Co Ore / Co Waste	Cr Ore / Cr Waste	Plunge of Ore	Discovery
Pride of Emory	max. @ 3550 150x60	875 3250-4125	704	1.46	0.38	3.84	---	---	N40°W 53° 3200-4000	Prospecting
Brunswick 1	max. @ 3850 110x60	525 3350-3875	123	1.10	0.35	3.14	---	---	N20°W 75° 3350-3800	Prospecting
Brunswick 2	max. @ 3150 180x70	825 2700-3525	570	1.40	0.60	2.33	---	---	N30°W 56° 2800-3525	SP ?
Brunswick 2A	max. @ 3675 110x70	350 3575-3925	290	0.98	0.35	2.80	--- O	---	N40°W 72° 3600-3750	SP ?
Brunswick 2G	max. @ 2800 70x65	300 2675-2975	131	0.56	0.27	2.07	0.07/0.01 = 7.0	---	N45°W 77° 2700-2875	Below Brunswick 2
Brunswick 5	max. @ 3550 120x70	600 3300-3900	409	1.49	0.50	2.98	---	---	N30°E 77° 3600-3825 Vertical 3300-3600	SP ?
Brunswick 7	max. @ 3350 90x50	200 3275-3475	23	2.37	0.75	3.16	---	---	N30°W 68° 3275-3450	Underground
Brunswick 8	max. @ 3600 20x40	175 3475-3650	12	1.75	0.61	2.86	---	---	N20°E 79°	Underground
Brunswick 10	max. @ 3500 70x55	200+ 3350-3575	38	0.74	0.35	2.11	---	---	N30°W 70-80°	Underground
2663	max. @ 2750 50x60	325 2675-3025	102	0.86	0.32	2.69	---	---	N40°W 68°	Underground
6800	max. @ 3100 50x50	300 2950-3250	47	0.66	0.24	2.75	0.052/0.002 = 26.0	---	N70°W 56°	Underground
600	max. 100x45	300 3225–3550	83	1.42	0.42	3.04	---	---	S30°W 66°	Underground
Portal zone		620	2,375	0.25	0.11	2.27	---	---	probable steep	Underground

								southeast plunge surface 2700'	
4600	max. @ 3100 250x100	643+ 2800-3550	805	1.35	0.73	1.80	0.027/0.002 = 13.5	0.185/0.152 = 1.22	N45°W 82° 2800-3250	Underground
4400	max. 40x50	150+ 3075-3275	27.25	0.51	0.22	2.31	0.012/0.006 = 2.0	---	N50°W 76° 3075-3275	Underground
4300	max. 90x40	225 3200-3425	62	0.91	0.51	1.78	0.063/0.002 = 31.5	0.083/0.040 = 2.07	N50°W 61°	Underground
2200	max. 50x50	750 2650-3350+	135	0.68	0.38	1.79	0.036/0.002 = 18.0	0 148/0.087 = 1.70	N60°W 75° 2650-3350	Underground
2000	max. 30x30	50	3.4	1.33	0.33	4.03	---	---	N45°W 80°	Offset at 2200 ?
1900	max. 50x80	300 3295-3575+	45	0.86	0.45	1.91	---	---	N60°W 63° 3400-3550	Underground
1800	max. 50x80	150 3250-3400	40	0.53	0.23	2.30	0.023/0.005 = 4.60	---	S60°E 60°	Above 2200
1700	max. 12x12	50	1	2.00*	---	---	---	---	---	Offset of 2000 ?
1600	max. 170x90	425 3225-3650	216	0.97	0.34	2.85	0.04/0.01 = 4.0	---	S50°W 69° 3200-3600	Underground 200' interval D.D. on 3550 level
1500	max. 200x70	1,130 2675-3675+	668	1.37	0.45	3.04	0.06/0.01 = 6.0	0.12/0.01 = 12.0	N30°E 55° 2700-3400	Underground 200' interval D.D. on 3550 level
1400	max. 50x60	468 3275-3725+	53	0.71	0.32	2.21	0.03/0.005 = 6.0	---	N50°W 65° 3275-3725	Underground 200' interval D.D. on 3550 level
Chinaman	max. 90x100	638 2700-3290+	376	0.73	0.30	2.43	0.046/0.010 = 4.60	0.225/0.10 = 2.50	N60°W 68° 2650-3050	Below Trail surface showing
Climax	max. 50x90	598 2700-3200+	211	0.78	0.36	2.16	0.028/0.010 = 2.80	---	N30°W 63° 2650-3200	Intersected in 3050 crosscut
512	max. 30x50	225 3875-4015	28	1.08	0.41	2.63	---	---	S45°W 75° 3725-3850	Below Nickel Star showing

*Approximate.

SUMMARY OF MINERAL DEPOSITS

NAME	GEOLOGICAL SETTING	ALTERATION	STRUCTURAL SETTING
Pride of Emory	Several elongate mineralized bodies; in ore zone, rock grades from dunite to bronzite; sharp contact to east with hornblende pyroxenite and grades into peridotite or dunite on the west	Strong talc in hornblende pyroxenite immediately north of Pride of Emory pit	N20°E strong fractures northwest and northeast faulting
Brunswick 1	Zoned from dunite core to harzburgite to barren bronzite; main diorite contact to the south is parallel to footwall of ore		Sketchy information indicates moderate faulting northwest-northeast throughout Brunswick 1, 2, 2A
Brunswick 2, 2A, 2G	Massive type; enstatite and olivine with interstitial sulphides	Moderate-strong actinolite in hangingwall parallel to plunge	
Brunswick 5, 7	Enclosed in enstatitic pyroxenite, Brunswick 5 has dunitic core grading to peridotite to barren enstatite rock	Most of the dunite shows crumbly alteration	Weak northwest faults dip 45°E
Brunswick 8	Massive orebody; ore is enstatitic pyroxenite in sulphide groundmass; barren pyroxenite and norite lenses may be inclusions	Actinolite in hornblende pyroxenite on northwest side	
Brunswick 10	Ore associated with lense of enstatite		Intersecting northwest and northeast fault zones below ore zone
2663	Mineralized peridotite core surrounded by barren pyroxenite; diorite contact in footwall	Moderately crumbly alteration in peridotite to north; moderate actinolite parallel to peridotite pyroxenite contact to south	Faulting N75°W 60°N N20°E 40°E

6800	Several tabular zones; fine sulphides in pyroxenite; breccia fragments of norite occur in ore zone	Crumbly zone below deposit on 2950 level	Faulting N50-70°W
600	Peridotite ore follows steeply plunging norite-hornblende-pyroxenite contact	Zones of crumbly alteration have irregular distribution	Faulting N15°E parallel to long axis
Portal zone	Low-grade peridotite mineralization enclosed in hornblende pyroxenite		
4600	Zoned with olivine-barren core and olivine-rich rim; inclusions of diorite occur in ultramafic; massive ore sections favour footwall side of orebody	Weak actinolite in footwall; moderately crumbly alteration at pyroxenite-peridotite contact to north	Fault N15°E 40°W
4400	Ore lies along a north-south peridotite-pyroxenite contact	Crumbly alteration parallel to north and east contacts on footwall; actinolite with faults	Faulting northwest; dip east; N20°E 35°E; N15°W 55°E
4300	Probably off-shoot of 4600; disseminated sulphides in hornblende pyroxenite	Fracture zones contain actinolite	Faulting N15°W vertical
2200	Ore near the contact of norite embayment; sulphides are disseminated in peridotite pipe enclosed in barren pyroxenite		
1900	Zoned body; consists of irregular disseminations in an oval-shaped body with hornblende peridotite core rimmed by enstatite-hypersthene rock and a partial hornblende-pyroxenite shell	Strong talc in ore near footwall	Faulting N15°W 40°W
1800	Mineralized body occurs in pipe-like body of peridotite enclosed in pyroxenite	Some talc at contact	May be a faulted offset of 2200
1700	Dunitic ore northwest of 2000	Crumbly alteration	
1600	Zoned body; dunitic core to barren hornblende peridotite; on 3200 level a breccia with ore fragments in norite may indicate post-ore faulting	Strong talc in ore near diorite contact along hangingwall; strong crumbly alteration near top of ore	

SUMMARY OF MINERAL DEPOSITS *(Continued)*

NAME	GEOLOGICAL SETTING	ALTERATION	STRUCTURAL SETTING
1500	Ore in both hornblende peridotite and hornblende pyroxenite as both massive and lacy types with a concentration of massive near bottom; ore has been either dammed or cut off by a flat hornblendite dyke; footwall contains a breccia with diorite fragments in mineralized hornblende pyroxenite	Large zone of crumbly alteration north of ore zone; some crumbly alteration in ore zone	Moderate faulting parallel to major axis of orebody
1400	Ore in a peridotite-pyroxenite mixture with diorite on southwest and northeast contacts	Moderate actinolite in pyroxenite	Northwest trending faults dip east and west
Chinaman	Ore mainly in hornblende pyroxenite with barren peridotite core; footwall and northeast side is a hornblende pyroxenite diorite – B zone	Strong actinolite-talc-magnetite below and in hangingwall of zone	
Climax	Ore parallels norite contact and overlaps peridotite-pyroxenite contact	Crumbly alteration near north contact	
512	Zoned structure with barren core and sulphides in shell of olivine pyroxenite; barren hornblende pyroxenite and hornblendite surrounds ore		

to have limited tonnage potential. In addition to the diamond-drill testing, the showing was checked by detailed geochemical soil sampling, magnetometer surveys, and a self-potential survey.

At year end there were two watchmen, one grader and bulldozer operator, and one supervisor employed to watch and maintain the property.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 117; 1973, pp. 131, 132; Clark, W. E., 1969, Giant Mascot Mines Ltd., Geology and Ore Control, *Western Miner*, No. 42, pp. 40-46.

EMANCIPATION MINE (92H/SW-34) (Fig. B, No. 17)

LOCATION: Lat. 49° 30′ Long. 121° 15′ (92H/6, 11W)
NEW WESTMINSTER M.D. Ten miles northeast of Hope, in the Coquihalla Valley, 2 miles north of Jessica.

CLAIMS: HOPE 1 to 32, Mineral Lease M-35.

OWNER: J. A. Stewart.

OPERATOR: EMANCIPATION MINES LTD., c/o J. A. Stewart, 1430 Victoria Drive, Port Coquitlam.

METALS: Gold, silver, copper.

DESCRIPTION: The southwest part of the area is underlain by greenstone and serpentinite, which are intruded by small bodies of diorite. The rocks are overlain unconformably to the northeast by Ladner slates; a basal conglomerate and sandstone unit occurs under the northwest claims. The Ladner slates were isoclinally folded and intruded by narrow feldspathic dykes. Mineralized quartz veins occur in shear zones and associated fractures in greenstone adjacent to the slates, and also in the feldspathic dykes. The mineralization consists of pyrite, arsenopyrite, minor chalcopyrite, and free gold, with some pyrrhotite in the dykes.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; diamond drilling, three holes totalling 100 feet; geochemical soil survey, 80 samples taken at 100 and 200-foot intervals along three lines across the greenstone-slate contact covering Hope 1-32, Raymond (Lot 1299), and Sunshine (Lot 1300).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 266; *B.C. Dept. of Mines & Pet. Res.*, unpublished report; Assessment Reports 3015, 4930.

AUFEAS (92H/SW-36) (Fig. B, No. 15)

LOCATION: Lat. 49° 21′ Long. 121° 29′ (92H/6W)
NEW WESTMINSTER M.D. Three miles southwest of Hope, on Wardle Creek, west side of Silverhope Creek, between 750 and 1,500 feet elevation.

CLAIMS: CAM 1 to 5, CAM EXT 1 to 3, RAM 1.

OWNER: CAMROCK MINES LTD., c/o C. Lee, RR 2, Skagit Road, Hope.

METALS: Gold, silver, copper, iron, arsenic.

(92H/6E)

DESCRIPTION: Gold, silver, copper, iron, and arsenic mineralization is associated with granodiorite.

WORK DONE: Underground work, 15 feet (portal cleaned out plus 15 feet of entry); existing road repaired.

REFERENCE: *B.C. Dept. of Mines & Pet Res.*, GEM, 1973, p. 132.

CAMP (Fig. B, No. 16)

LOCATION: Lat. 49° 29' Long. 121° 14' (92H/6E)
NEW WESMINSTER M.D. Twelve air miles east-northeast of Hope, straddling Ladner Creek at its junction with the Coquihalla River.

CLAIMS: CAMP 1 and 2.

OWNER: CAROLIN MINES LTD., 811, 850 West Hastings Street, Vancouver.

METAL: Gold.

DESCRIPTION: The claims are underlain by fissile black slates of the Ladner Group. Quartz veins in the plane of schistosity commonly contain pyrrhotite and pyrite.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 55 samples taken at 50-foot intervals on two lines parallel with Ladner Creek (covering an old gold showing).

REFERENCE: Assessment Report 5053.

WEL (92H/SE-136) (Fig. B, No. 7)

LOCATION: Lat. 49° 23' Long. 120° 53' (92H/7W)
SIMILKAMEEN M.D. Eighteen miles southwest of Princeton, surrounding Wells Lake which drains to the west into the Tulameen River, between 4,800 and 5,700 feet elevation.

CLAIMS: WEL 1 to 30.

OWNER: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Copper, molybdenum.

DESCRIPTION: Quartz veins and fracture fillings contain disseminated copper, molybdenum, and pyrite in a granodiorite which cuts a migmatic gneiss-schist complex of the Eagle granodiorite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and ground magnetometer survey, 26 line-miles, 100 by 400-foot grid spacing covering Wel 1-20; geochemical survey, 26 line-miles, 891 soil samples, 112 rock samples, and 84 stream sediment samples, 200 by 400-foot grid spacing covering all claims; grid cut and surveyed.

FIVE FISSURES (92H/SE-98) (Fig. B, No. 3)

LOCATION: Lat. 49° 17' Long. 120° 43' (92H/7E)
SIMILKAMEEN M.D. About 16 miles southwest of Princeton, on both sides of Whipsaw Creek.

(92H/7E)

CLAIMS: MAE 1 to 21, 36 to 47, MIKE 1 and 2.

OWNER: WHIPSAW MINES LTD., 706, 509 Richards Street, Vancouver.

METALS: Copper, zinc, lead, silver, gold.

WORK DONE: SP survey, 1.5 line-miles covering Mae 4, 36, and 39.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 118; Assessment Report 5024.

SIMILKAMEEN MINE (INGERBELLE) (92H/SE-4, 5, 6) (Fig. B, No. 85)

By David Smith

LOCATION: Lat. 49° 20′ Long. 120° 33′ (92H/7E)
SIMILKAMEEN M.D. Ten miles south of Princeton, on Highway 3.

CLAIMS: Eighty-eight Crown-granted claims including INGERSOLL BELLE, INVINCIBLE, LELA, and RED BUCK, Mineral Leases M-64, M-96, M-97, M-98, M-99, and 127 recorded claims including AF, RAY, MCB, DEER, NUT, RAD, SER, BETH, OREGON, PEON, MAY, SL, and EM.

OWNER: SIMILKAMEEN MINING COMPANY LIMITED, Box 520, Princeton.

METAL: Copper (production shown on Table 6).

DESCRIPTION: Most of the known copper mineralization occurs in altered Nicola Group volcanic breccia near the contact with intrusive rocks of the Lost Horse Complex.

WORK DONE: At this open pit approximately 23,200,000 tons was mined of which 5,080,000 tons was milled.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 132; *B.C. Dept. of Mines & Pet. Res.*, Bull. 59, 1972, *Geology of Copper Mountain*, by V. A. Preto.

GOLDROP (92H/SE-124) (Fig. B, No. 2)

LOCATION: Lat. 49° 21′ Long. 120° 37′ (92H/7E)
SIMILKAMEEN M.D. Ten miles southwest of Princeton, immediately north of the junction of Fourteen Mile Creek and Whipsaw Creek, at approximately 5,000 feet elevation.

CLAIMS: GOLDROP 1 to 6.

OWNER: H. P. Huff.

OPERATORS: R. M. and H. P. HUFF, Princeton.

METALS: Gold, silver, copper, lead, zinc (production shown on Table 6).

DESCRIPTION: The Goldrop claims are underlain by tuffs and breccias of the Nicola Group of Late Triassic age.

WORK DONE: Surface diamond drilling, six holes totalling 1,600 feet on Goldrop 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 272; 1973, p. 24.

PIK (Fig. B, No. 6)

LOCATION: Lat. 49° 22′ Long. 120° 30′ (92H/7E, 8W)
SIMILKAMEEN M.D. Four to 5 miles south of Princeton, immediately north of Smelter Lake.

CLAIMS: PIK, BEN, GAM, DEC, WR, totalling approximately 42.

OWNER: BENPEL INDUSTRIES LTD., 200, 535 Howe Street, Vancouver.

WORK DONE: Geochemical soil survey, 5 line-miles, 118 samples taken at 150 by 200-foot grid spacing covering Pik 10, 12-16.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 133; Assessment Reports 4528, 4992.

LAM (92H/SE-135) (Fig. B, No. 5)

LOCATION: Lat. 49° 24′ Long. 120° 41′ (92H/7E)
SIMILKAMEEN M.D. South-southwest of Princeton, on upper Lamont Creek, between 4,200 and 5,700 feet elevation.

CLAIMS: LAM 1 to 24.

OWNER: CANADIAN OCCIDENTAL PETROLEUM LTD., Minerals Division, 801, 161 Eglinton Avenue East, Toronto, Ont.

METAL: Copper.

DESCRIPTION: Chalcopyrite, pyrrhotite, and cuprite occur in fractures and veins and as broken blebs in pyroclastic rocks and lavas of the Nicola Group, which here includes andesitic lavas, fragmental and pyroclastic rocks, tuffs, volcanic sediments, black shales, and a small dioritic intrusion. The bedded formations have been folded along a north-south axis resulting in fracturing and shearing.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 28 line-miles, 100 by 400-foot grid spacing; geochemical survey, 28 line-miles, 790 soil samples, 77 rock samples, and 114 stream silt samples taken on a 200 by 400-foot grid spacing covering all claims; surface diamond drilling, one hole totalling 603 feet on Lam 15; grid cut and surveyed.

GD (92H/SE-134) (Fig. B, No. 4)

LOCATION: Lat. 49° 26′ Long. 120° 41′ (92H/7E)
SIMILKAMEEN M.D. Eight miles west of Princeton and 5 miles south of Coalmont.

CLAIMS: GD, TTL.

OWNER: C. I. Dyakowski.

OPERATOR: TERRY DOUBT, Box 508, Princeton.

METALS: Gold, copper.

DESCRIPTION: Nicola Group volcanic rocks are intruded by a small gabbro stock, which in turn is transected by a shear zone trending east to northeast. A quartz vein follows the shear zone and is itself faulted. The vein carries variable amounts of pyrite, chalcopyrite, and free gold.

WORK DONE: Prospecting of four claims (GD 1 and 2 and TTL 1 and 2).

REFERENCE: Assessment Report 5043.

GE, VI (92H/SE-78) (Fig. B, No. 55)

By V. A. Preto

LOCATION: Lat. 49° 29′ Long. 120° 28′ (92H/8W)
SIMILKAMEEN M.D. In open grassland on Bald Mountain, 2.5 miles northeast of Princeton.

CLAIMS: GE, VI, totalling approximately 20.

OWNERS: G. I. BURR, Box 370, Princeton and E. MULLIN, Box 334, Princeton.

METAL: Copper.

DESCRIPTION:

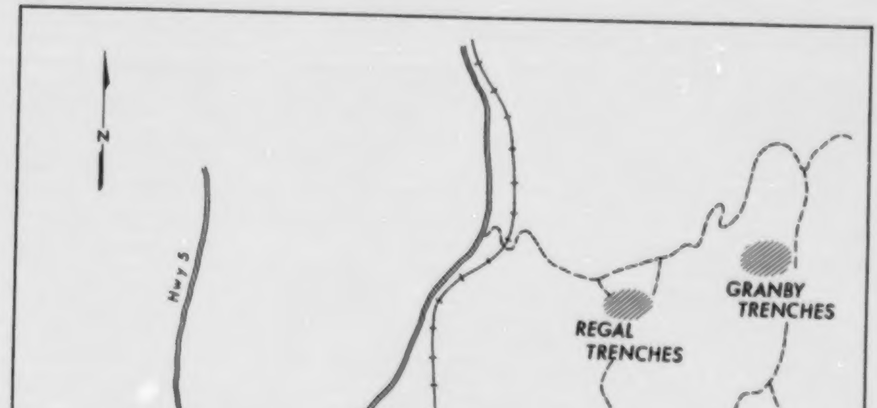

N
Hwy 5
KETTLE VALLEY R.R.
GRANBY TRENCHES
REGAL TRENCHES
OTHER TRENCHES
PRINCETON
Similkameen River
Hwy 3
0 2000 4000
SCALE - FEET
0 500 1000
SCALE - METRES

Figure 13. Location map, Granby and Regal trenches, GE, VI claims.

(92H/8W)

HISTORY: The first work in this area was done in 1905. The Granby Mining Company Limited held ground on Bald Mountain from 1951 to 1962 and up to 1955 did considerable trenching, some diamond drilling, and geochemical and geophysical surveys. Messrs. Mullin and Burr staked the ground in 1962 and have held it to this date. Silver Standard Mines Ltd. optioned the ground in 1962 and through Climax Copper Mines Limited did geological mapping, geophysical and geochemical surveys, diamond and other drilling, and trenching at several localities.

Granby optioned the property in 1965 and drilled 41 percussion holes (Fig. 14) totalling 5,880 feet in the area of the Granby trenches. In 1970 the property was optioned by Joy Industries Limited who did some diamond drilling and made an effort to acid leach some highly oxidized material in the vicinity of the Regal trenches. In 1971, D. C. Findlay consultants mapped the area on behalf of Selco Exploration Company Limited. In 1973 Bethlehem Copper Corporation Ltd. optioned the property from Joy and drilled five widely spaced diamond holes (Fig. 14), two of which are in the area of the Granby trenches. The property has now reverted to the owners, Messrs. Burr and Mullin.

GEOLOGY: The best showings known on the claims are found in the areas of the Regal and Granby trenches. The area of the Regal trenches has been reported to be underlain by an old landslide deposit which rests on younger strata. Such slide probably originated from the area of the Granby trenches which are on higher ground to the east. The slide material has been reported to contain several hundred thousand tons of oxide-sulphide copper mineralization averaging about .50 per cent total copper.

The area known as the Granby trenches lies some 3,500 feet to the east of the eastern edge of the Middle Eocene Princeton basin and is underlain by highly fractured and altered Nicola volcanic rocks and by a medium-grained, magnetic, pyroxene diorite which is probably closely associated in age and origin with the Nicola rocks. Two zones of intensely broken, altered, and deeply oxidized rock traverse the area in a northwesterly direction (Fig. 14) and probably represent major fault zones. The most southerly of these areas is at least 300 feet wide.

The main area of mineralization is located to the northeast of the two zones of crushing and alteration and consists of disseminations and fracture fillings of chalcopyrite and pyrite in saussuritized microdiorite. Where exposed in trenches the microdiorite is markedly magnetic. Appreciable mineralization is exposed in trenches T-4 and T-7 in magnetic microdiorite.

The drilling and trenching done to date have produced somewhat contradicting results. The best intersection is in DDH 73-4 and indicates mineralization averaging .25 to .30 per cent copper to a depth of 300 feet, with the lower 298 feet of the hole being barren. Percussion holes X and Y which straddle DDH 73-4 indicate much lower values, and penetrated only to a much shallower depth. In most cases percussion holes indicate values that are considerably lower than reported in DDH 73-4 or in nearby trenches.

The information that is available to this writer indicates that the area between DDH 73-4 and trench T-4 is underlain by a narrow, northwesterly trending zone of low-grade copper mineralization which weakens and narrows considerably to the northwest but remains untested to the southeast of DDH 73-4.

WORK DONE: No work was carried out during 1974.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 275.

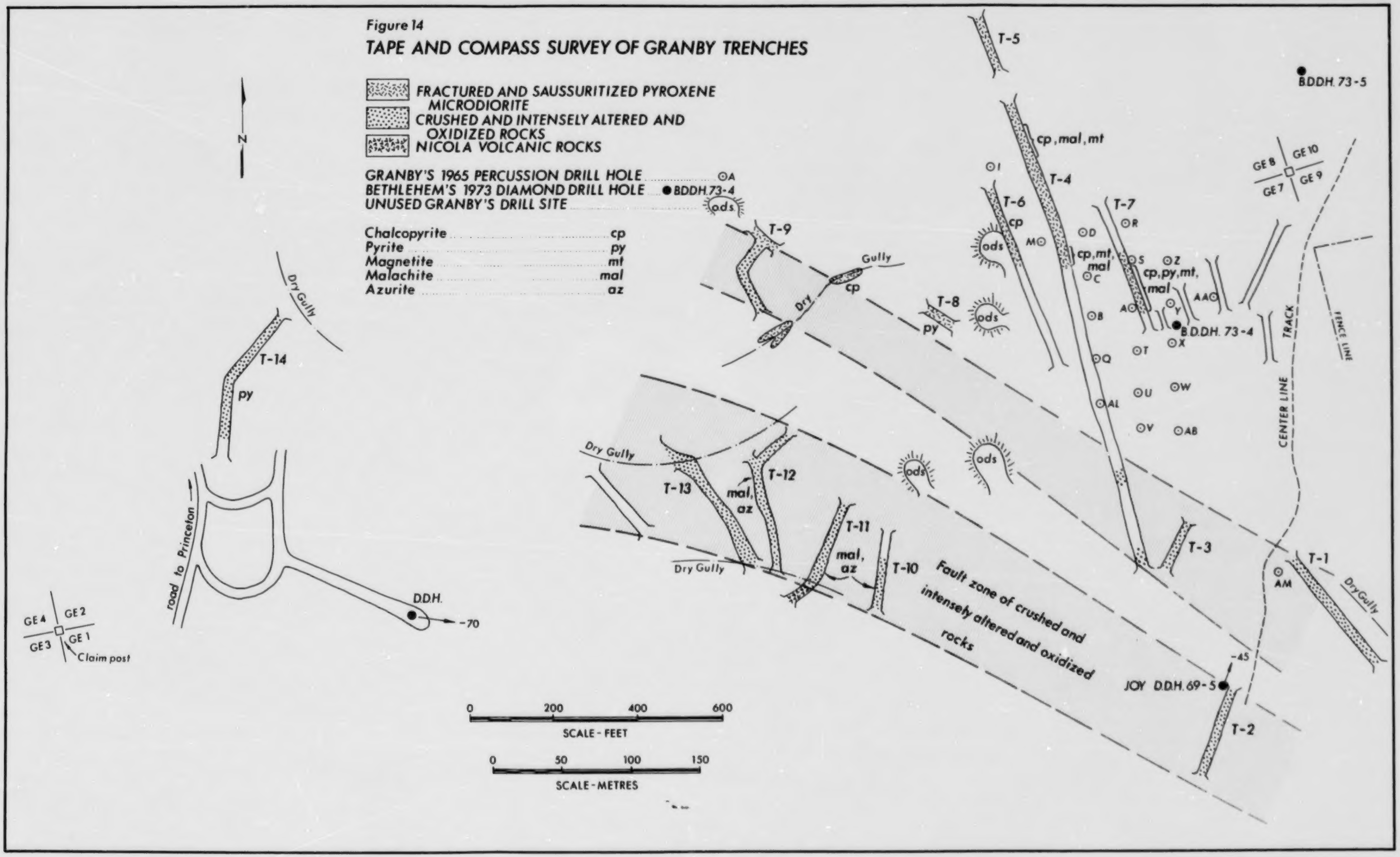


Figure 14

TAPE AND COMPASS SURVEY OF GRANBY TRENCHES

N
▨ FRACTURED AND SAUSSURITIZED PYROXENE MICRODIORITE
▨ CRUSHED AND INTENSELY ALTERED AND OXIDIZED ROCKS
▨ NICOLA VOLCANIC ROCKS
GRANBY'S 1965 PERCUSSION DRILL HOLE ⊙A
BETHLEHEM'S 1973 DIAMOND DRILL HOLE ● BDDH 73-4
UNUSED GRANBY'S DRILL SITE ods
Chalcopyrite cp
Pyrite py
Magnetite mt
Malachite mal
Azurite az
T-1
T-2
T-3
T-4
T-5
T-6
T-7
T-8
T-9
T-10
T-11
T-12
T-13
T-14
cp, mal, mt
cp
cp, mt, mal
cp, py, mt, mal
py
mal, az
mal, az
ods
Dry Gully
Dry Gully
Dry Gully
Dry Gully
Dry Gully
BDDH 73-5
B.D.D.H. 73-4
JOY D.D.H. 69-5
-45
D.D.H.
-70
GE 8
GE 10
GE 7
GE 9
GE 4
GE 2
GE 3
GE 1
Claim post
I
M
D
C
B
Q
AL
R
S
Z
A
Y
AA
X
T
U
W
V
AB
AM
TRACK
CENTER LINE
FENCE LINE
road to Princeton
Fault zone of crushed and intensely altered and oxidized rocks
0 200 400 600
SCALE - FEET
0 50 100 150
SCALE - METRES

COPPER FARM (92H/SE-91) (Fig. B, No. 9)

LOCATION: Lat. 49° 26′ Long. 120° 24′ (92H/8W)
SIMILKAMEEN M.D. Four miles due east of Princeton, immediately south of both the Similkameen River and the adjacent highway.

CLAIMS: BARB 1 to 4.

OWNER: C. SIEMENS, 714 Hemlock Street, Kamloops.

METALS: Copper, silver.

DESCRIPTION: The claims are underlain mainly by Nicola Group andesite, which is intruded by dykes of quartz porphyry. A granitic rock is exposed on the south part of Barb 1 claim. A shear zone along the boundary between Barb 1 and 2 claims carries lenses of chalcopyrite, tetrahedrite, and bornite in quartz and carbonate.

WORK DONE: Prospecting of four claims; geological examination of showings.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1929, p. 277; Assessment Report 5014.

HEDLEY TAILINGS (Fig. B, No. 8)

LOCATION: Lat. 49° 21′ Long. 120° 04′ (92H/8E)
OSOYOOS M.D. Hedley, at 2,000 feet elevation.

CLAIMS: N.A.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver V6B 3T5.

METAL: Gold.

DESCRIPTION: Gold in tailings from operations at Nickel Plate plus Mascot (prior to 1955).

WORK DONE: Rotary drilling, 16 holes totalling 589 feet; hammer drill used to sample overburden.

LORI (92H/NE-138) (Fig. B, No. 18)

LOCATION: Lat. 49° 39′ Long. 120° 04′ (92H/9E)
OSOYOOS and SIMILKAMEEN M.D. Seven miles east-southeast of the community of Osprey Lake, at the headwaters of Lost Chain Creek, between 4,500 and 6,000 feet elevation.

CLAIMS: LORI 1 to 33, JON 1 to 7, LUCY 1 to 50, LU 1 to 5, CM 1 to 12, BRUCE 1 to 10.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, VANCOUVER V6B 3T5.

METAL: Molybdenum.

DESCRIPTION: The Lori claims are underlain by a red-coloured phase of the Coast Plutonic Complex of Jurassic (?) age. Phases of Coast granodiorite are granite feldspar porphyry, light medium-grained quartz monzonite to granodiorite, and fine-grained quartz monzonite to granodiorite.

(92H/9W, 16W)

WORK DONE: Linecutting, 45 miles of grid; surface geological mapping, 1 inch equals 400 feet; geochemical soil and silt survey, 1,723 samples taken at 200 by 800-foot grid spacing and 500-foot intervals respectively; magnetometer survey, 21 line-miles covering central portion of claim group; surface diamond drilling, two BQ holes totalling 1,001 feet on Lori 3 and 4.

REFERENCE: Assessment Report 5177.

AMANDA, SNOWSTORM (92H/NE-32, 63) (Fig. B, No. 31)

LOCATION: Lat. 49° 46′ Long. 120° 20′ (92H/9W, 16W)
SIMILKAMEEN M.D. Eight miles west-northwest of Osprey Lake, on Siwash Creek.

CLAIMS: AMANDA 1 to 24, AMIE 1, 2, PACO 1 to 20.

OWNER: DIANA EXPLORATIONS LTD., 551 Howe Street, Vancouver.

METALS: Gold, copper, silver, lead, zinc.

DESCRIPTION: Quartz diorite and granodiorite of the Pennask batholith are intruded by dykes and small masses of feldspar porphyry. All rocks have been extensively fractured, and some fractures are mineralized. The Renfrew silver-lead vein is on Amie 1 and 2, and pyrite, galena, and sphalerite occur along fine fractures near the common boundary of Amanda 1 and 21.

WORK DONE: Approximately 19 line-miles of grid repair and magnetometer survey covering Amanda 1-24 and Paco 1-20.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 160; Assessment Report 4969.

V, W (Fig. B, No. 25)

LOCATION: Lat. 49° 32′ Long. 120° 35′ (92H/10E)
SIMILKAMEEN M.D. Six miles north 25 degrees west of Princeton, on Asp Creek.

CLAIMS: V 1 to 20, W 1 to 20.

OWNER: CANOREX DEVELOPMENT LTD., 8, 784 Thurlow Street, Vancouver.

DESCRIPTION: Kingsvale agglomerate and porphyritic basalt are intruded by a large dyke of granodiorite of the Otter intrusions.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering V 1, 2, 16, 18, 20 and W 9, 10, 12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 141; Assessment Report 5123.

ANITA (92H/NE-139) (Fig. B, No. 23)

LOCATION: Lat. 49° 42′ Long. 120° 33′ (92H/10E)
SIMILKAMEEN M.D. Twenty miles north of Princeton, 2 miles due east of Allison Lake.

(92H/10E)

CLAIMS: ANITA 11 to 22.

OWNER: BRONSON MINES LTD., 1019, 409 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: Purple and green Nicola volcanic rocks are intruded by north to northwest-striking diorite dykes. Toward the south both rocks have been pyritized and contain a little chalcopyrite.

WORK DONE: Prospecting and geological mapping of 12 claims at 1 inch equals 500 feet.

REFERENCES: Assessment Reports 4963, 4964.

PINE (92H/NE-3) (Fig. B, No. 20)

LOCATION: Lat. 49° 42' Long. 120° 35' (92H/10E)
SIMILKAMEEN M.D. Sixteen miles north-northeast of Princeton, immediately east of Allison Lake.

CLAIMS: PINE 8 to 35, REG 1 to 16, DY 1 to 8.

OWNER: PACIFIC RESOURCES DEVELOPMENT LTD., 1785 Hornby Street, Vancouver.

METAL: Copper.

WORK DONE: Geochemical soil survey, 263 samples taken at 200-foot intervals along fill-in lines covering Pine 12, 14-16, 19-35.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 278; 1973, p. 146; Assessment Reports 4464, 5034.

CINDY (92H/NE-126) (Fig. B, No. 24)

LOCATION: Lat. 49° 45' Long. 120° 35' (92H/10E)
SIMILKAMEEN M.D. Twenty-six miles north of Princeton, 4 miles north-northeast of Allison Lake.

CLAIMS: CINDY 2 to 21.

OWNER: BRONSON MINES LTD., 101, 40 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: Nicola Group pyroclastic rocks, with pockets of limestone, underlie most of the southwest two-thirds of the property. Flow rocks occur to the northeast. These rocks are irregularly intruded by a fine-grained diorite. Chalcopyrite occurs sporadically in pyroclastic rocks and diorite. On Cindy 13 and 15 claims the diorite is strongly pyritized.

WORK DONE: Prospecting covering 20 claims; magnetometer survey, 12 line-miles covering Cindy 2, 4, 6, 8, 10, 12-21.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 148; Assessment Reports 5044, 5114.

COUSIN JACK (92H/NE-18) (Fig. B, No. 22)

LOCATION: Lat. 49° 36′ Long. 120° 48′ (92H/10W)
SIMILKAMEEN M.D. Four and one-half miles northwest of Tulameen, on Boulder Mountain.

CLAIMS: PIT 1 to 6, HOPE 1 to 24, JM 1 and 2, HAWK 1 to 4, REX 1 to 4, WORTH 1 to 8, plus Mineral Leases M-82, M-83, M-84, and M-87.

OWNER: GOLD RIVER MINES & ENTERPRISES LTD., 802, 1433 Burnaby Street, Vancouver.

METALS: Copper, zinc, lead, silver.

DESCRIPTION: Sheared greenstones of the Nicola Group predominate. Granodiorite of the Coast Plutonic Complex occurs on the eastern part of the property. Massive and disseminated sulphides (chalcopyrite and pyrite) occur in quartz veins up to 7 feet wide. Peripheral quartz veins carry sphalerite and galena.

WORK DONE: 1973 – surface diamond drilling, 33 holes totalling 5,800 feet on Hope 11, 21, JM 2, and Mineral Lease M-83.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 283.

WHY, LOG (92H/NE-127, 129) (Fig. B, No. 19)

LOCATION: Lat. 49° 35′ Long. 120° 55′ (92H/10W)
SIMILKAMEEN M.D. Seven miles northwest of Tulameen, about 1 mile northwest of the confluence of Skwum and Lawless Creeks, at approximately 4,500 feet elevation.

CLAIMS: WHY 1 to 12.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Molybdenum, minor copper.

DESCRIPTION: The Why 1 to 12 claims are underlain by Upper Triassic Nicola Group volcanic rocks intruded by granodiorite. The volcanic rocks are fractured flows and tuffs of andesitic composition which contain dykes and sills of coarse-grained to aplitic, light-coloured rocks.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering roadcuts on Why 2, 4, 6, 7, and 9 and 1 inch equals 40 feet covering trenches on Why 4 and 9; trenching, 865 feet on Why 4 and 9; road construction, 1,130 feet on Why 4 (bulldozer access trail).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 150.

IRA (92H/NE-39) (Fig. B, No. 21)

LOCATION: Lat. 49° 37′ Long. 120° 55′ (92H/10W)
SIMILKAMEEN M.D. Nine miles west-northwest of Tulameen, straddling the headwaters of Skwum Creek, at approximately 3,500 feet elevation.

CLAIMS: BIC 1 to 3, IRA 1, 2, 4, 6, 8, 10 to 24, MAYNARD 1 to 12, LONGER 1 and 2.

(92H/11E)

OWNER: S. Young.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver V7X 1M8.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite and molybdenite occur as fracture fillings and disseminations both in a biotite feldspar porphyry and Nicola Group volcanic rocks.

WORK DONE: Surface diamond drilling, six holes totalling 2,045 feet on Maynard 7 and Ira 4, 13, 14, 15.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 150.

WHAT, PIE (Fig. B, No. 33)

LOCATION: Lat. 49° 42' Long. 121° 02' (92H/11E)
NICOLA M.D. Three miles south of the junction of Juliet Creek and the Coldwater River and 2 miles west of the Coldwater River, between 4,000 and 5,000 feet elevation.

CLAIMS: WHAT 1 to 8, PIE 1 to 4.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver V6C 1N5.

METALS: Copper, molybdenum.

DESCRIPTION: Schistose Nicola Group volcanic rocks are intruded by granodiorite. Copper and molybdenum mineralization occurs sporadically, along with up to 2 per cent disseminated pyrite.

WORK DONE: Surface geological mapping, 1 inch equals 20 feet covering What 3-5 (trenches only); geochemical survey, 34 soil samples taken at 100-foot grid spacing, 0.68 line-mile covering Pie 1 and 2 and 114 rock samples taken at 10 and 20-foot grid spacing, 0.55 line-mile covering What 3-5; road construction, one-half mile to gain access to What 3 and 5; trenching, 2,920 feet on What 3-5.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 152.

AURUM, IDAHO, PIPESTEM (92H/NW-3, 6-11, 13, 14) (Fig. B, No. 32)

LOCATION: Lat. 49° 31' Long. 121° 18' (92H/11W)
NEW WESTMINSTER M.D. Ten miles northeast of Hope, on Ladner Creek, at approximately 3,500 feet elevation.

CLAIMS: AURUM 1 to 6 (Lots 1236 to 1241), IDAHO and TRAMWAY (Lots 1234 and 1235), HOME GOLD 1 to 15, GOLD STAR 1 to 4, CABIN 1 to 14, CABIN 20 and 21 Fractions, SYLVIA Fraction, CARO 1 to 27, 29 and 30.

OWNER: CAROLIN MINES LTD., 811, 850 West Hastings Street, Vancouver.

METAL: Gold.

DESCRIPTION: Replacement type gold zone consisting of albite-carbonate, pyrite, pyrrhotite, arsenopyrite, and chalcopyrite occur in the Jurassic Ladner slate sequence of argillite, wackes, and slates.

(92H/15W)

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering three-quarters of the property; magnetometer survey, 22 line-miles, 50 by 400-foot grid spacing covering one-half the claims; geochemical soil survey, 22 line-miles, 50 by 400-foot grid spacing covering one-half the claims; surface diamond drilling, 25 holes totalling 8,000 feet on the Idaho claims; surface workings mapped, 1 inch equals 20 feet (Idaho claims).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 152.

WOG (92H/NE-62) (Fig. B, No. 30)

LOCATION: Lat. 49° 59' Long. 120° 53' (92H/15W)
NICOLA M.D. Ten miles southwest of Merritt, covering most of the Salem Creek basin.

CLAIMS: GOW 1 to 26, GOLD 1 to 52.

OWNER: GOLD RIVER MINES & ENTERPRISES LTD., 802, 1433 Burnaby Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims cover a granodiorite plug which intrudes the Nicola Group of Late Triassic age. A gabbro plug covers the northern part of the property. Mineralization consists of disseminations, splashes, and discontinuous stringers of chalcopyrite and molybdenum occurs along fracture planes.

WORK DONE: 1973 – surface diamond drilling, two holes totalling 993 feet and trenching, 2,500 feet on Gow 5, 6, 7, and 8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 376.

MOB (92H/NE-140) (Fig. B, No. 29)

LOCATION: Lat. 49° 46' Long. 120° 37' (92H/15E)
NICOLA M.D. Twenty-six miles north of Princeton, immediately north of Hornet Lake.

CLAIMS: MOB 1 to 20.

OWNER: BRONSON MINES LTD., 1019, 409 Granville Street, Vancouver.

METALS: Copper, lead, silver.

DESCRIPTION: Granodiorite of the Mount Pike batholith underlies the west and southwest part of the property. To the east Nicola Group andesite is engulfed northward by younger diorite. Pyrite, chalcopyrite, and less bornite occur in a dark diorite and are accompanied by chalcocite and galena in a narrow quartz vein. Galena in breccia is exposed in an old trench on Mob 8.

WORK DONE: Prospecting; magnetometer survey, 14 line-miles; surface geological mapping, 1 inch equals 500 feet; geochemical soil survey, 728 samples taken at 100 by 400-foot grid spacing covering all claims.

REFERENCES: Assessment Reports 4994, 5081, 5082.

LOG (Fig. B, NO. 27)

LOCATION: Lat. 49° 47' Long. 120° 34' (92H/15E)
NICOLA and SIMILKAMEEN M.D. Twenty-three miles north of Princeton, 1 to 3 miles west of Missezula Lake, between 4,100 and 4,500 feet elevation.

CLAIMS: LOG 1 to 72.

OWNER: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METAL: Copper.

DESCRIPTION: Pyrite is fairly widespread and occurs as disseminations. Chalcopyrite is generally rare and occurs as specks or disseminations. The claims are underlain by Upper Triassic Nicola Group sedimentary and volcanic rocks intruded by mesocratic plugs. Rocks of the Coast Plutonic Complex of Jurassic age occur near the southwest corner of the property.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; percussion drilling, 10 holes totalling 2,955 feet on Log 35, 41, 52, 54, 57, 63, and 66.

REFERENCE: Assessment Report 5331.

GOLDEN GATE, CINCINATTI, BANK OF ENGLAND (92H/NE-80, 83, 84) (Fig. B, No. 28)

LOCATION: Lat. 49° 55' Long. 120° 34' (92H/15E)
NICOLA M.D. Three miles southeast of Aspen Grove, surrounding Alleyne Lake, at approximately 4,000 feet elevation.

CLAIMS: EM 1 to 16, KIWI 1 to 4, TOR 1 to 14, MIKE 1 to 12, JOEY 1 to 4.

OWNER: GOLD RIVER MINES & ENTERPRISES LTD., 802, 1433 Burnaby Street, Vancouver.

METALS: Copper, minor silver.

DESCRIPTION: Disseminated chalcocite and native copper occur as primary minerals; cuprite, malachite, and native copper occur as secondary minerals. Traces of bornite, chalcopyrite, and pyrite are also present.

WORK DONE: 1973 – surface geological mapping, 1 inch equals 200 feet covering EM 1-16 and Tor 1-4; magnetometer and electromagnetic survey, 24 line-miles covering same claims; surface diamond drilling, 13 holes totalling 2,830 feet on EM 4 and 16; linecutting, 24 miles of grid covering EM 1-16 and Tor 1-4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1891, p. 1182; 1964, p. 96; *B.C. Dept. of Mines & Pet. Res.,* unpublished report.

JUNE (92H/NE-61) (Fig. B, No. 26)

LOCATION: Lat. 49° 58' Long. 120° 33' (92H/15E)
NICOLA M.D. Fourteen miles southeast of Merritt, 2 miles northwest of Pothole Lake, centred on Quilchena Creek, at approximately 3,200 feet elevation.

(92H/16E)

CLAIMS: QUIL 1 to 8.

OWNERS: DOME EXPLORATION (CANADA) LIMITED and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.

METAL: Copper.

DESCRIPTION: Disseminations and fracture fillings of chalcopyrite with minor bornite and chalcocite are associated with weak skarn development in calcareous pyroclastic rocks of the Upper Triassic Nicola Group.

WORK DONE: Magnetometer survey, 10 line-miles, 200 by 400-foot grid spacing and linecutting, 10 miles of grid covering Quil 1-8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 158.

BRENDA MINE (92H/NE-47) (Fig. B, No. 86)

By David Smith

LOCATION: Lat. 49° 53′ Long. 120° 00.5′ (92H/16E)
OSOYOOS M.D. One and one-half miles southeast of Brenda Lake.

CLAIMS: Mineral Leases M-58, M-59, M-77, M-78, M-79, M-82, and M-83 plus 233 located claims. The open pit lies primarily within Mineral Lease M-58.

OWNER: BRENDA MINES LTD., Box 420, Peachland.

METALS: Copper, molybdenum (production shown in Table 6).

DESCRIPTION: Chalcopyrite and molybdenite occur with quartz and quartz feldspar as fractures fillings in a quartz diorite host. The majority of fractures, which are less than one-half inch in width, strike approximately north 60 degrees east and are vertical. The intensity of fracturing decreases from the centre of the orebody outwards.

WORK DONE: The mill worked to capacity, 24,000 tons per day, throughout the year. Copper concentrates are trucked to Kelowna and transferred to railway cars. An addition was made to the heavy duty repair shop permitting all equipment to be steam cleaned prior to entering shop for maintenance.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 163.

ASHCROFT 92I

LUCKY TODD (92I/SE-52) (Fig. B, No. 34)

LOCATION: Lat. 50° 03′ Long. 120° 46′ (92I/2)
NICOLA M.D. Five miles south-southeast of Merritt, covering the top of Iron Mountain, at approximately 5,000 feet elevation.

CLAIMS: MAKELSTIN 1 to 10, 21A, 22A, 25 to 28, 31 to 54, 55B, 57 to 62.

OWNER: ACAPLOMO MINING & DEVELOPMENT CO. LTD., Box 277, Merritt V0K 2B0.

METALS: Copper, silver, lead, zinc.

DESCRIPTION: Chalcopyrite, pyrite, sphalerite, and silver-bearing minerals occur in a barite vein in a fault zone. The claims are underlain by steeply tilted beds of Nicola Group basalt, andesite, rhyolite, and occasional sedimentary rocks including limestone.

WORK DONE: Linecutting, 3.7 miles of grid; geochemical soil survey, 180 samples taken at 100 by 300-foot grid spacing covering Makelstin 18 and 19; surface diamond drilling, one hole totalling 50 feet on Makelstin 22A.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 142; *Geol. Surv., Canada*, Mem. 249, pp. 81, 82; Assessment Reports 5185, 5228.

SUNNY BOY, CAT (92I/SE-49, 117, 118, 119) (Fig. B, No. 35)

LOCATION: Lat. 50° 08′ Long. 120° 31′ (92I/2E)
NICOLA M.D. Two miles due south of Quilchena.

CLAIMS: SUNNYBOY 1 to 9, GOLD 49 and 50, SPITFIRE 1 and 2, SHANNON (Lot 5201).

OWNER: L. E. PECKHAM, Box 387, Cache Creek.

METALS: Gold, silver, copper.

DESCRIPTION: Nicola andesites underlie the property and are cut by rusty quartz veins carrying values in gold and copper. Mineralization occurs on Sunnyboy 4-7 and Spitfire 2.

WORK DONE: 1973 – nine samples taken at irregular intervals along a gold-bearing vein on Sunnyboy 7 and Spitfire 2; all claims were prospected.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1967, p. 170; Assessment Reports 2750, 5091, 5092.

CRAIGMONT MINE (92I/SE-35) (Fig. B, No. 59)

By T. M. Waterland

LOCATION: Lat. 50° 12.5′ Long. 120° 55.7′ (92I/2W)
NICOLA M.D. Eight miles northwest of Merritt, at the forks of Birkett Creek, between 3,800 and 4,200 feet elevation.

CLAIMS: Mineral Leases M-1 (McLEOD 7, 8), M-2 (MERRELL 5 to 8, McLEOD 1 to 6, AL 1 and 5 Fractions), M-7 (AL 3 FR.), M-10 to 12 (HEC 12, 13, and 14 Fractions), M-14 and 15 (MERCHANTS 7 and 8), M-16 (HEC 5 FR.), M-17 (NED 6), and 74 located claims including PAYSTIN, MERRELL, EDITH, PRICE, QUARTZITE, NED, etc. The Craigmont orebodies are located on the Merrell 7 and 8 and McLeod 5 and 6 claims.

OWNER: CRAIGMONT MINES LIMITED, 700, 1030 West Georgia Street, Vancouver; mine address, Box 3000, Merritt.

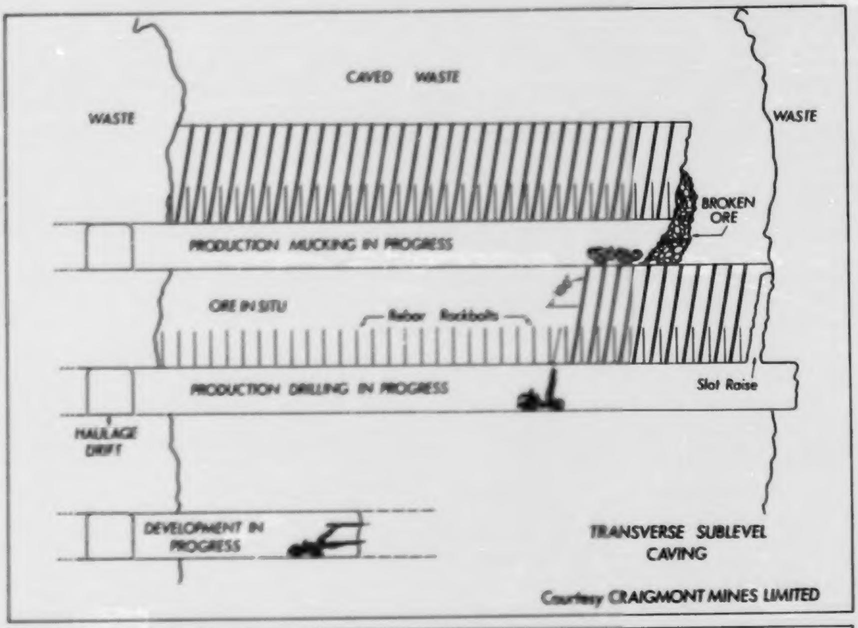
METALS: Copper, iron (production shown in Table 6).

DESCRIPTION: The Craigmont orebodies are pyrometasomatic replacement deposits occurring mainly in a limy host rock lying within the thermal aureole of the Guichon Creek batholith.

WORK DONE:

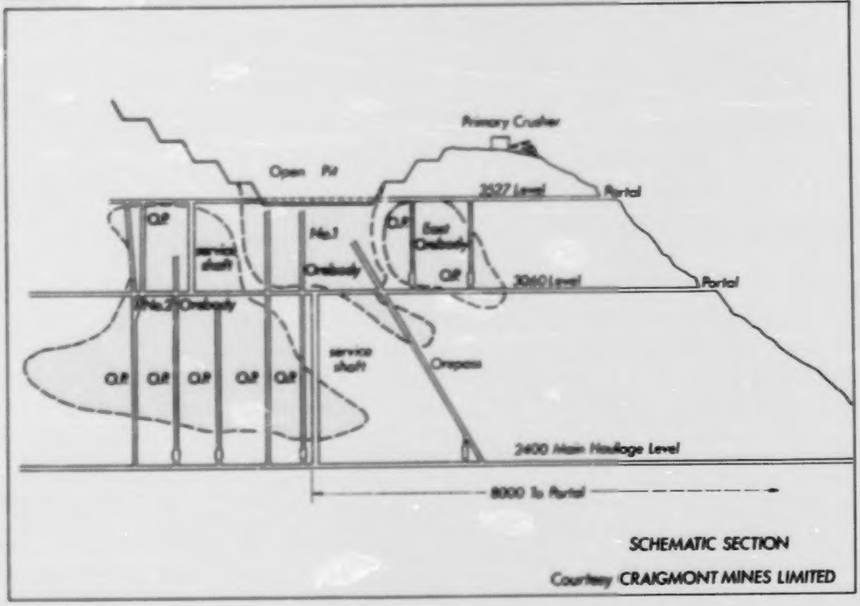
Except for short periods of closure caused by labour strikes this mine has operated continuously since October 1961.

During 1974 the average number of persons employed was 430 of which 232 were employed underground. In addition to company employees, five men are employed at the mine by the contract diamond drilling company. In 1974, 35 days were lost due to labour strikes.


CAVED WASTE
WASTE
WASTE
BROKEN ORE
PRODUCTION MUCKING IN PROGRESS
ORE IN SITU
Rebar Rockbolts
PRODUCTION DRILLING IN PROGRESS
Slot Raise
HAULAGE DRIFT
DEVELOPMENT IN PROGRESS

TRANSVERSE SUBLEVEL CAVING

Courtesy CRAIGMONT MINES LIMITED


Primary Crusher
Open Pit
3527 Level
Portal
O.P
service shaft
No.1 Orebody
O.P
East Orebody
O.P
3060 Level
Portal
No.2 Orebody
service shaft
Orepass
O.P
O.P
O.P
O.P
O.P
2400 Main Haulage Level
8000 To Portal

SCHEMATIC SECTION

Courtesy CRAIGMONT MINES LIMITED

Figure 15. Mining methods and schematic section, Craigmont Mines Limited.

The mine concentrator treated 1,697,692 tons of ore during 1974, most of which was obtained from the underground mine. A small tonnage of stockpiled low-grade ore from the open-pit operation was treated. Underground production in 1974 averaged 4,700 tons per day.

The Craigmont mine was the first British Columbia mine to employ a sub-level caving mining method. This is a trackless mining operation which utilizes diesel L.H.D. units of 5-cubic-yard capacity for production and development haulage. Development drilling is by means of diesel-powered multi-boom jumbos and production by multi-drill fan drill jumbos.

Most underground development and production workers work on an individual incentive bonus system. This system combined with modern equipment and excellent management makes Craigmont a very efficient underground mining operation. Figure 15 is a schematic section of the Craigmont mine. A schematic longitudinal section of the sub-level caving method is illustrated on Figure 15. Ore is delivered from the production heading via L.H.D. units directly to 7-foot diameter steel-lined ore passes. The ore is collected on the 2400 main haulage level and delivered via an 8,000-foot haulage adit to the primary crusher on surface.

The loading chutes and trains on the 2400 level are operated by remote control and an elaborate block light system is used to ensure operational safety.

The ventilation of a large-tonnage trackless mine is always a major problem. At Craigmont mine 380,000 cubic feet per minute of fresh air enters the mine via intake adits on the 2400 and 3060 levels. Each adit is equipped with a 73-inch axial vane 500-horsepower fan capable of delivering 190,000 cubic feet per minute at 13.5-inch static water gauge. Air is exhausted on the 3060 level and 3500 level where fans of 150 horsepower and 400 horsepower respectively are located. Auxilliary ventilation is rovided by 60-horsepower fans forcing air through 36-inch metal ducting in haulage drifts and 30-inch flexible ducting in production drifts. Primary ventilation fans utilize a total of 1,450 horsepower and auxiliary ventilation a total of 1,750 horsepower.

Maintenance of underground equipment is carried out almost entirely in the underground maintenance shop on 3060 level.

Whenever possible ground support at the Craigmont mine is provided by means of 'shot-creting' or a combination of 'shot-creting' and 're-bar' rock bolting. In areas where shot-creting is used wet shot-crete is applied as drift headings are advanced. Shot-crete is found to be very effective in weak ground where no movement is anticipated. The thin skin of concrete can seal and bear the weight of loose ground and hold it together. When required 're-bars' are installed in a pattern of 8-foot fanned holes and consist of ¾-inch reinforcing bars grouted into the holes. In areas where ground movement is anticipated and shot-creting is not adequate, 10 by 10-inch drift sets are used. Steel-lined ore passes are necessary where large tonnages of ore are passed through relatively incompetent rock. Because the ore tends to 'pack' and hang up in vertical ore passes, it is necessary that they be kept empty. To facilitate this condition a sonic sensing device has been installed in the 846 ore pass bin. This sensor automatically triggers signal lights at the ore dump points when the bin is full and at the loading chute when the ore reaches its lower limit. 'Rock-box' offsets are provided in the ore pass to limit the vertical drop and thus inhibit the impact packing effect in the ore pass.

(92I/2W)

As dump points occur at 33-foot intervals in the ore zones, it is necessary to arrange dump points for various active levels that are dumping simultaneously.

The productivity of the mine is about 19 tons per man employed underground including supervision, electrical, and mechanical personnel.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 165.

QUARTZITE (92I/SE-35) (Fig. B, No. 36)

LOCATION: Lat. 50° 12.5' Long. 120° 51.5' (92I/2W)
NICOLA M.D. West of the Chataway Lakes road due north of the Craigmont mill and office complex.

CLAIM: QUARTZITE 5.

OWNER: CRAIGMONT MINES LIMITED, Box 3000, Merritt.

METALS: Copper, iron.

DESCRIPTION: The BQ hole was lost in overburden but the NQ hole intersected quartz diorite of the border phase of the Guichon Creek batholith.

WORK DONE: Surface diamond drilling, one BQ hole totalling 129 feet and one NQ hole totalling 617 feet on Quartzite 5.

REFERENCE: Assessment Report 5327.

BE (92I/SE-79) (Fig. B, No. 37)

LOCATION: Lat. 50° 15' Long. 120° 51' (92I/2W, 7W)
NICOLA M.D. Immediately west of the Merritt-Mamit Lake highway bridge over Tyner Creek and adjoining Guichon Creek on the west.

CLAIMS: ELKROC, TAP, totalling approximately 15.

OWNERS: Carolin Mines Ltd. and Sonic-Ray Resources Ltd.

OPERATOR: SONIC-RAY RESOURCES LTD., 440, 890 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Outcrop on the claim area is poor but that seen is quartz diorite of the Hybrid phase of the Guichon Creek batholith.

WORK DONE: Time-domain IP survey, 3.3 line-miles covering Elkroc 1-6 and Tap 5, 7, 9, 11, 13, 15, 18.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1968, p. 196; Assessment Report 4931.

NB (92I/SW-67) (Fig. B, No. 62)

LOCATION: Lat. 50° 22' Long. 121° 04' (92I/6E)
KAMLOOPS M.D. One and one-half miles south of Spaist Mountain, at approximately 5,300 feet elevation.

CLAIMS: NB 1 to 4, 19 to 23, 31 to 33.

OWNER: HIGHLAND STAR MINES LIMITED, 470 Vienna Crescent, North Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The drill hole intersected unmineralized Chataway (?) variety granodiorite. Pink (potassic ?) and propylitic alteration zones were encountered.

WORK DONE: Surface diamond drilling, one hole totalling 321 feet on NB 4.

REFERENCE: Assessment Report 5182.

MOOSE, AWARD (Fig. B, No. 58)

LOCATION: Lat. 50° 25' Long. 121° 01' (92I/6E, 7W)
KAMLOOPS M.D. Twenty miles southwest of Ashcroft, immediately to the south of the Lornex mine.

CLAIMS: MOOSE, AWARD, IRIS, ERIK, IL, MM, AW, LORNEX, GRANITE, ZONE, NW, XL, totalling approximately 110.

OWNER: LORNEX MINING CORPORATION LTD., 202, 580 Granville Street, Vancouver.

DESCRIPTION: The claims are underlain mainly by Bethsaida phase granodiorite and quartz monzonite of the Guichon Creek batholith. Minor Skeena variety granodiorites occur locally. Trace chalcopyrite occurs in one outcrop.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; linecutting, 126.5 miles of grid; magnetometer survey, 12.5 line-miles; time-domain IP survey, 14.5 line-miles covering Award 57-70, Moose 1-3 Fractions, Granite 11, 12, and XL 16, 17.

REFERENCES: Assessment Reports 5050, 5051.

AM, IDE (HIGHMONT) (92I/SE-13, 88, 152) (Fig. B, No. 45)

LOCATION: Lat. 50° 26' Long. 121° 00' (92I/6E, 7W)
KAMLOOPS M.D. On the west slopes of Gnawed Mountain, south side of Highland Valley, at approximately 5,000 feet elevation.

CLAIMS: AM 1 to 11, IDE 1, 3 to 8, 12 to 18, NEW IDE 19, 20, ANN 3, 4, 7, 18, and 20 Fractions, NEW ANN 11 Fraction, PHYLLIS Fraction, AWSIUKIEWICZ 1 Fraction, MO 2 and 3 Fractions, JAY 102, JAY 103 Fraction.

OWNER: HIGHMONT MINING CORP. LTD., Box 700, Ashcroft.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, bornite, and molybdenite occur as thin veneers on fracture planes, in quartz veins, and in zones of intense sericite alteration. Mineralization occurs in Skeena granodiorite and the Gnawed Mountain quartz plagioclase porphyry dyke.

WORK DONE: VLF EM survey, 29 line-miles, 400-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 330; Assessment Report 5342.

KEN (92I/SW-66) (Fig. B, No. 60)

LOCATION:	Lat. 50° 26′ Long. 121° 01′ (92I/6E) KAMLOOPS M.D. Immediately adjacent and southeast of the Lornex mine, at approximately 5,000 feet elevation.
CLAIMS:	KEN 21, 22, NEW KEN 23 to 26 Fractions.
OWNERS:	Highmont Mining Corp. Ltd. and Teck Corporation Ltd.
OPERATORS:	HIGHMONT MINING CORP. LTD., Box 700, Ashcroft and KENNCO EXPLORATIONS, (WESTERN) LIMITED, 505 Burrard Street, Vancouver.
METALS:	Copper, molybdenum.
DESCRIPTION:	Chalcopyrite, bornite, and molybdenite occur as thin veneers on joint and fracture faces. Bethsaida phase quartz monzonite of the Guichon Creek batholith is intruded by quartz porphyry dykes.
WORK DONE:	VLF EM survey, 8 line-miles, 400-foot grid spacing and magnetometer survey, 4.5 line-miles, 400-foot grid spacing covering all claims.
REFERENCE:	Assessment Report 4980.

VICTOR (SKEENA) (92I/SW-5) (Fig. B, No. 92)

By W. J. McMillan

LOCATION:	Lat. 50° 27.7′ Long. 121° 01.2′ (92I/6E) KAMLOOPS M.D. South side of Highland Valley, 1.2 kilometres northeast of the Lornex open pit, at approximately 4,700 feet elevation.
CLAIMS:	DIVIDE COPPER, DIVIDE COPPER 1 to 3 (Mineral Leases M-141 to M-144, Lots 5697, 5698, 5682, and 5683).
OWNER:	LORNEX MINING CORP. LTD., Box 1500, Logan Lake.
METAL:	Copper.
DESCRIPTION:	

HISTORY: The claims were located by Skeena Silver Mines Ltd. over the old Victor group in 1955. Old work on the property included a 33-metre crosscut adit, a 9-metre winze, and a 6-metre shaft. In 1955, the old workings were renovated, access roads were built, and some bulldozer trenching was done. In 1956 work comprised a further 128 metres of drifting and crosscutting, 244 metres of underground diamond drilling, a soil geochemical survey, 396 metres of surface diamond drilling, and considerable trenching. Only 122 metres of surface diamond drilling was done in 1957. The property was inactive until 1962 when the Victor showing, an area 244 metres by 305 metres within the claim group, was optioned by Bio Metals Corporation Ltd. Bio Metals blasted and stockpiled 680 tonnes of surface vein material from which they attempted to leach copper. During 1966 and 1967, a 45,360-tonne leach stockpile was constructed. The leaching experiment failed and the stockpile was subsequently reduced in size to 3,175 tonnes. Ten percussion holes were also drilled in the proposed pit area. In 1965 Lornex Mining Corp. Ltd. purchased the claims comprising the southern part of the Skeena Silver Mines Ltd.'s property and optioned the remaining claims with the exception of the Victor showing. The property and Victor showing are now owned by Lornex Mining Corp. Ltd.

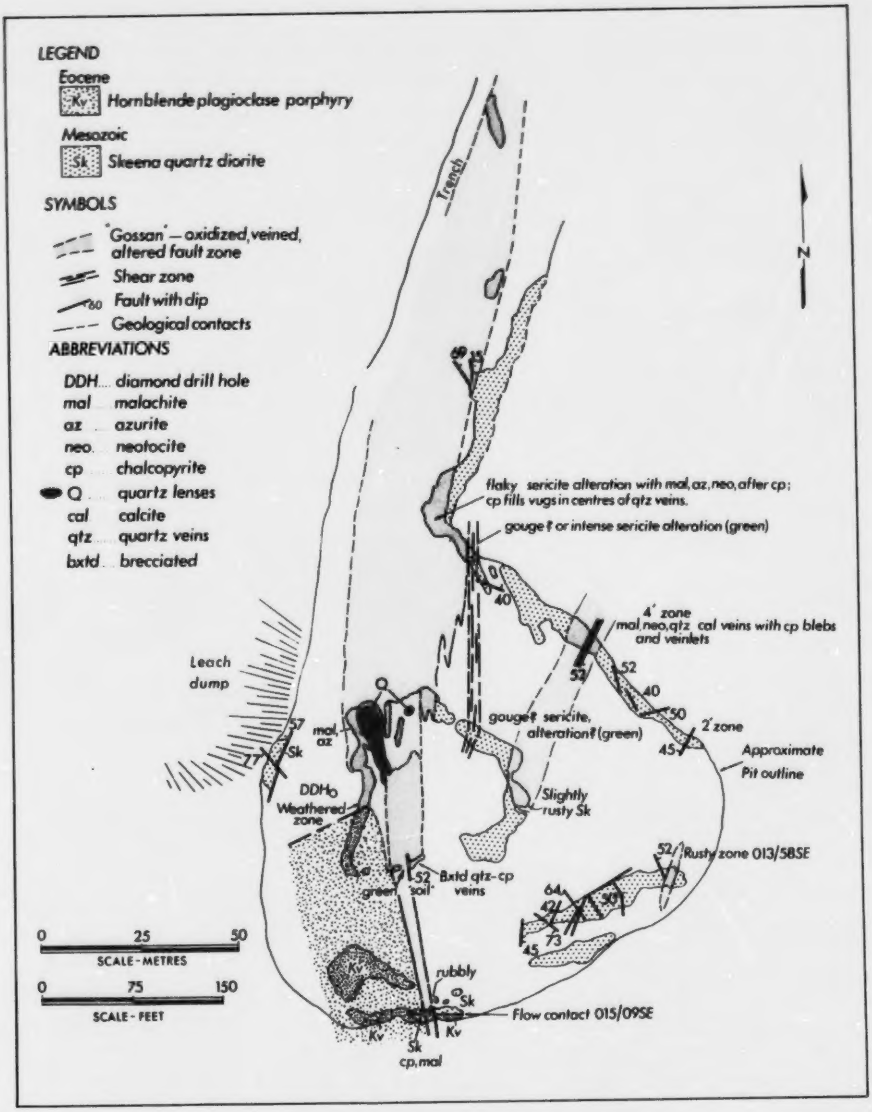

LEGEND
Eocene
Kv Hornblende plagioclase porphyry
Mesozoic
Sk Skeena quartz diorite
SYMBOLS
'Gossan' — oxidized, veined, altered fault zone
Shear zone
60 Fault with dip
Geological contacts
ABBREVIATIONS
DDH diamond drill hole
mal malachite
az azurite
neo neotocite
cp chalcopyrite
Q quartz lenses
cal calcite
qtz quartz veins
bxtd brecciated
Trench
N
flaky sericite alteration with mal, az, neo, after cp; cp fills vugs in centres of qtz veins.
gouge? or intense sericite alteration (green)
4' zone mal, neo, qtz cal veins with cp blebs and veinlets
2' zone
Approximate Pit outline
gouge? sericite, alteration? (green)
Slightly rusty Sk
Rusty zone 013/58SE
Leach dump
mal, az
Sk
DDH
Weathered zone
green 'soil'
Bxtd qtz-cp veins
rubbly
Sk
Flow contact 015/09SE
Kv
Kv
Kv
Sk cp, mal
69
15
40
52
52
40
50
45
57
77
52
64
42
50
73
45
52
0 25 50
SCALE - METRES
0 75 150
SCALE - FEET

Figure 16. Geology of the Victor (Skeena) showing, Highland Valley.

GEOLOGY: The Victor pit area is underlain primarily by quartz diorite and granodiorite of the Skeena variety of the Guichon Creek batholith. The rock is coarse grained with large anhedral quartz crystals, subhedral plagioclase laths, and sparse interstitial K-feldspar. Mafic minerals are subhedral and hornblende generally exceeds biotite in abundance.

North of the showings, the country rock is cut by an Eocene hornblende plagioclase porphyry dyke. In the pit area (Fig. 16) similar Eocene porphyry is found in both fault and volcanic flow contact with Skeena quartz diorite.

Along the western side of the pit, the quartz diorite is cut by a 30-metre-wide north-northeast-trending, sheared, veined, and pervasively oxidized zone. In the eastern part of the pit the country rock is generally well jointed and locally crossed by a network of faults. Two other northeast-trending oxidized shear zones which are 2 and 7 metres wide respectively occur in the eastern side of the pit.

MINERALIZATION AND ALTERATION: Based on trenching done before the pit was excavated, White, Thompson, and McTaggart (1957) described the main oxidized zone as a fault zone up to 90 metres wide striking north 22 degrees east and dipping moderately to the east. The underground workings exposed a quartz vein within the fault zone which contains silicified remnants of country rock and strikes north 12 degrees west with low to moderate easterly dips. The vein has networks of pyrite and chalcopyrite which locally coalesce to form pods of massive sulphide. They report vein widths varying from several centimetres to almost 2.5 metres. Seams and grains of pyrite and chalcopyrite are also disseminated throughout areas of sericite, chlorite, and carbonate alteration in the fault zone. Carr (*Minister of Mines, B.C.* Ann. Rept., 1968, p. 189) reports that mineralization is confined to a zone within the fault which is up to 15 metres wide.

In the present pit the oxidized gossan contains nearly barren quartz lenses, quartz-chalcopyrite veins, some of which are brecciated, and quartz-carbonate veins carrying veinlets and blebs of chalcopyrite. Very fine sericite and flaky sericite alteration are evident in the gossan zones. Many fractures carry malachite or azurite and some have neotocite. In veins, these minerals, along with iron oxides, encrust chalcopyrite.

Away from the gossaned fault zone, epidote, quartz-epidote, epidote-chlorite, and chlorite coat joint faces. These mineralized joints have three predominant orientations: 010 degrees to 020 degrees/35 degrees to 55 degrees southeast; 050 degrees/88 degrees northwest; and 155 degrees to 170 degrees/70 degrees northeast to 50 degrees southwest. In the country rock mafic minerals are weakly chloritized and plagioclase has mild argillic alteration. Adjacent to mineralized joints alteration is stronger. Two fault sets predominate in the pit, although others occur. There is a set striking 020 degrees to 030 degrees subparallel to the mineralized zone with moderate easterly or westerly dips and a younger set striking 150 to 175 degrees with general northeasterly dips.

Judging from underground and drill data (*Minister of Mines, B.C.,* Ann. Rept., 1957, p. 27), mineralization forms a zone which has strike length of 150 metres, extends down-dip 100 metres, and is 0.45 to 1.8 metres wide. Assuming specific gravity 2.70 and average width 1 metre, vein reserves are approximately 40,000 tonnes. The average grade of the vein is uncertain but is probably close to 1.5 per cent copper. Expected geological reserves would be about 100,000 tonnes with similar grade.

WORK DONE: No exploration work conducted in 1974.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1957, p. 27; 1968, p. 189; White, W. M., Thompson, R. M., and McTaggart, K. C., 1957, Geology and Mineral Deposits of Highland Valley, B.C., *C.I.M.,* Trans., Vol. LX, pp. 273-289.

LORNEX MINE (92I/SW-45) (Fig. B, No. 43)

By E. Sadar

LOCATION: Lat. 50° 27' Long. 121° 03' (92I/6E)
KAMLOOPS M.D. Approximately 26 miles southeast of Ashcroft on the southern slope of Highland Valley, at approximately 5,000 feet elevation.

CLAIMS: Mineral Leases M-48 to M-145 and other claims including AWARD, SKEENA COPPER, AM, LORNEX SOUTH, totalling approximately 470.

OWNER: LORNEX MINING CORP. LTD., Box 1500, Logan Lake.

METALS: Copper, molybdenum (production shown on Table 6).

DESCRIPTION: The orebody is located in the Bethlehem phase of the Guichon Creek batholith. The host rock (Skeena quartz diorite) is intruded by pre-mineral quartz porphyry dyke and minor aplite dykes. Sulphides occur along fractures, in quartz veins, and as disseminations in alteration zones adjacent to veins and fractures. The main ore minerals are chalcopyrite, bornite, and molybdenite.

WORK DONE:

Mining is carried out by conventional open-pit mining methods, with benches being developed on 40-foot intervals. Major mining equipment is as follows: three Bucyrus-Erie 45-R rotary drills; four P&H 2100-B, 15-cubic-yard electric shovels; one Bucyrus-Erie 280-B, 15-cubic-yard electric shovel; twenty-three Wabco 120-B, 120-ton haul trucks; and two Wabco 3200, 200-ton haul trucks.

Forty-five diamond-drill holes, totalling 43,448 feet, were completed on the Lornex, Divide Copper, AM, Award, Skeena Copper, and Chalco claims. A geochemical soil survey, 137 samples, was conducted over 2.2 line-miles and an induced polarization survey and a ground magnetometer survey were completed covering 108 and 98 line-miles respectively.

The following material was excavated during the year: ore, 16,147,589 tons (7,913,000 cubic yards); waste, 24,101,968 tons (12,084,000 cubic yards); total, 41,249,557 tons (19,997,000 cubic yards).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 169.

TOKETIC (92I/SW-46) (Fig. B, No. 61)

LOCATION: Lat. 50° 28' Long. 121° 13' (92I/6E)
NICOLA M.D. Five miles northeasterly of Spences Bridge, on a southeasterly flowing fork of Pimainus Creek, at approximately 4,000 feet elevation.

(92I/6E)

CLAIMS: VL, GD, TOM, TJM, totalling approximately 22.

OWNER: VALLEY COPPER MINES LIMITED, c/o Cominco Ltd., 2200, 200 Granville Square, Vancouver.

METAL: Copper.

DESCRIPTION: Fracture-controlled copper mineralization occurs in rocks of the Hybrid phase of the Guichon Creek batholith on GD 1 and 2 claims. The host rock is medium to coarse-grained diorite and quartz diorite. Copper sulphides and hematite occur in fractured and brecciated zones. The southern part of the claim group is underlain by metasedimentary rocks of Paleozoic (?) age.

WORK DONE: Linecutting, 10.5 miles of grid; ground magmetometer and frequency-domain IP survey, 9 line-miles, 400-foot grid spacing covering GD 1-2, Tom 3, 6, 7, VL 14-16, 18, and TJM 4-8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 150; Assessment Report 5002.

OK (ALWIN) MINE (92I/SW-10) (Fig. B, No. 63)

By E. Sadar

LOCATION: Lat. 50° 29′ Long. 121° 06′ (92I/6E)
KAMLOOPS M.D. Twenty-five miles from Ashcroft, 3 miles west of Quiltanton Lake, between 5,100 and 5,400 feet elevation.

CLAIMS: OK (Lot 3644), APEX (Lot 3645), IOU (Lot 3643), OK 5 to 10, EZZ 13, 14, 21 to 24, PAL 1, PAL 1 to 3 Fractions, CALL 1 to 4, ALWIN 1 and 2 Fractions, FBI Fraction.

OWNER: O.K. SYNDICATE (D K MINING, INC. and INTERNATIONAL MINERALS & CHEMICALS CORP.), Box 699, Ashcroft.

METAL: Copper.

DESCRIPTION: The mineralization occurs along shear zones in the Bethsaida phase granodiorite of the Guichon Creek batholith.

WORK DONE: The property was in production from March 1972 to December 1972. Falling copper prices and the low grade of ore being mined were given reasons for suspension of operations. During 1974 all new underground workings were geologically mapped at 1 inch equals 20 and 40 feet. Ten underground diamond-drill holes totalling 1,702 feet were completed and headings were driven 3,216 feet on Lots 3644 and 3643.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 155-157; 1973, p. 172.

KEN (Fig. B, No. 42)

LOCATION: Lat. 50° 21′ Long. 120° 45′ (92I/7)
NICOLA M.D. Approximately 18 miles north of Merritt, 1 mile west of Rey Lake and south of Rey Creek.

CLAIMS: KEN 1 to 40.

OWNER: K. J. NEWTON, 6017 Larch Street, Vancouver.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Upper Triassic Nicola Group.
WORK DONE: Linecutting and magnetometer survey, 13 line-miles covering Ken 1-10, 23-25, 27, 29, and 31.
REFERENCE: Assessment Report 4936.

TIL (Fig. B, No. 53)

LOCATION: Lat. 50° 17′ Long. 120° 48′ (92I/7W)
NICOLA M.D. Fifteen miles north of Merritt on the Mamit Lake road, immediately south of Tolman Creek.
CLAIMS: TIL 1 to 8, 11 to 16, 19, 20, 23, 24.
OWNER: ASHCROFT RESOURCES LTD., 728, 510 West Hastings Street, Vancouver.
WORK DONE: Lincutting and flagging, 29.2 miles of grid covering all claims.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 159; Assessment Report 5126.

FIN, LUCK (Fig. B, No. 75)

LOCATION: Lat. 50° 17′ Long. 120° 51′ (92I/7W)
KAMLOOPS M.D. On the Chataway road, 5 miles north of the Craigmont mine, on the west side of Guichon Creek, between 3,500 and 4,000 feet elevation.
CLAIMS: FIN 13 to 24, LUCK 1, 2, and 16.
OWNER: RIO PLATA SILVER MINES LTD., 400, 475 Howe Street, Vancouver.
METAL: Copper.
DESCRIPTION: Disseminated copper mineralization occurs in granodiorite of the Chataway variety of the Guichon Creek batholith.
WORK DONE: Completed diamond-drilling programme started in 1973; core logged; ground magnetometer survey, 1 line-mile over IP anomalies.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 173.

ROB, ORO (92I/SE-146) (Fig. B, No. 52)

LOCATION: Lat. 50° 21′ Long. 120° 58′ (92I/7W)
KAMLOOPS M.D. Fifteen miles southeast of Spences Bridge, 3 miles southwest of Chataway Lake and immediately west of the headwaters of Skuhun Creek.
CLAIMS: JANE 1 to 38.
OWNER: ROBERT TURNER, c/o 107, 325 Howe Street, Vancouver.
METAL: Copper.
DESCRIPTION: The claims are underlain by quartz monzonites of the Bethsaida phase of the Guichon Creek batholith.
WORK DONE: Linecutting and magnetometer survey, 16.2 miles of grid covering Jane 1-12, 14, 16-18, 37, and 38.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 357; Assessment Report 5052.

CNT, NEWT, RT (Fig. B, No. 49)

LOCATION: Lat. 50° 22' Long. 120° 47' (92I/7W)
NICOLA M.D. One mile south-southeast of Mamit Lake.

CLAIMS: CNT, NEWT, RT, totalling approximately 30.

OWNER: EXEL EXPLORATIONS LTD., 5, 6112 Willow Street, Vancouver.

WORK DONE: Linecutting and magmetomer survey, 17 miles of grid covering CNT 1-8 and Newt 1-8 during 1973.

REFERENCE: Assessment Report 4909.

PAT, LEM (92I/SE-73, 85) (Fig. B, No. 46)

LOCATION: Lat. 50° 23' Long. 120° 58' (92I/7W)
PRICE 1 to 58, 152 to 158, 163 to 166, RUBY 3 to 5, 11 to 22, 25, and 26 Fractions, ROSE Fraction, FRAN Fraction, JAY Fraction, PETE Fraction.

OWNER: Pathfinder Resources Ltd.

OPERATOR: HIGHMONT MINING CORP. LTD., Box 700, Ashcroft.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, bornite, and molybdenite form thin veneers on joint faces. Skeena, Bethsaida, and Chataway phases of Guichon Creek batholith underlie the claims.

WORK DONE: VLF EM survey, 28.25 line-miles, 400-foot grid spacing covering Price 11-14, 19, 21-30, 51-58, and Ruby 5, 16-19, 22 Fractions; geochemical soil survey, 1,849 samples, 35 line-miles, 100-foot grid spacing covering Price 13, 14, 19, 21, 23-26, 28, 37, 38, 55-58 and Ruby 5, 15, 19, 22 Fractions.

REFERENCES: Assessment Report 5143, 5218.

YUBET, PEN (92I/SE-144, 150) (Fig. B, No. 90)

LOCATION: Lat. 50° 24' Long. 120° 57' (92I/7W)
KAMLOOPS M.D. Surrounding and extending southerly from Roscoe Lake, at approximately 5,000 feet elevation.

CLAIMS: PEN 1 to 8, PEN 1 and 2 Fractions.

OWNER: HIGHMONT MINING CORP. LTD., Box 700, Ashcroft.

METALS: Copper, silver, molybdenum.

DESCRIPTION: Bornite and chalcopyrite occur in quartz veins in an aplite dyke within the Bethsaida phase of the Guichon Creek batholith.

WORK DONE: VLF EM survey, 8 line-miles, 400-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 330; Assessment Report 4959.

FIDDLER (BLACK BLUFF) (92I/SE-72) (Fig. B, No. 91)

By W. J. McMillan

LOCATION: Lat. 50° 25′ Long. 120° 51′ (92I/7W)
NICOLA M.D. On Dupuis Creek, northwest of Mamit Lake, at approximately 4,150 feet elevation.

CLAIMS: The area of the showings is partially covered by claims LAST TIME 1 and 2 which were staked on May 29, 1974. According to the claim maps, the showings are on AUG 3 claim.

METALS: Copper, molybdenum.

DESCRIPTION:

PREVIOUS WORK: In 1915, several small pits were sunk to test for molybdenite mineralization. A sample from the dump taken by Cockfield (1481) assayed 2.5 per cent copper, trace gold, and 62.5 grams per tonne (2 ounces per ton) silver.

In 1915, the property was called the Black Bluff. In 1956, Anuwon Uranium Mines Limited optioned the property from Mr. T. Curnow. More claims were acquired and geology, structures, and mineralized areas on the claim group were mapped (Assessment Report 140). The showings which are at the junction of the former Fiddler 3, 4, 5, and 6 claims were also mapped in detail, trenched, blasted, and sampled. Mineralization was found to be concentrated in a 4.5 by 9-metre (15 by 30-foot) area with grades just under 1 per cent copper. In 1957, a vertical-loop, single-frequency electromagnetic survey was conducted. Readings were taken along east-west lines 91.4 metres (300 feet) apart. The claims were indirectly tested again during geological, geochemical, and magnetic surveys of the contiguous JC claims by Northwestern Explorations, Limited in 1959. The next series of exploration ventures on the prospect began in 1965 when Consolidated Skeena Mines Ltd. did a geochemical survey followed by six X-ray diamond-drill holes totalling 183 metres (600 feet). Canmoo Mines Ltd. acquired the ground (called Aug, Cal) in 1967. They constructed 0.6 kilometre (1 mile) of access road, did 2,134 metres (7,000 feet) of trenching, and stripped a 12,140 square metre (3 acre) area. Results of self-potential, induced polarization, and resistivity surveys done in 1968 were tested by bulldozing 22 additional trenches with a total length of 1,075 metres (3,500 feet) and by drilling one 100-metre (328-foot) diamond-drill hole. Apparently, no further testing of the Fiddler prospect has taken place since that time.

GEOLOGY: West of the Fiddler prospect, the area is underlain by granitic rocks of the Late Triassic Guichon Creek batholith. To the east are rocks of the Gump Lake quartz monzonite stock, which is also of Late Triassic age (Northcote, 1969). The prospect is situated immediately east of the border of the batholith in an area of granitized metasedimentary rocks.

Immediately west of the main showing (Fig. 17) biotite hornblende quartz diorite crops out. Biotite and hornblende are equally abundant and the colour index of the rock is 30. Quartz is angular and interstitial. The rock is tentatively correlated with the Highland Valley phase of the Guichon Creek batholith. Pegmetitic granite lenses in it have quartz-epidote knots, some of which contain magnetite and chalcopyrite.

The area of the main showing is underlain primarily by biotite granodiorite which has folia, lenses, and locally schlieren of biotite. Grain size varies from fine to coarse. Gneissic foliations strike northward and are steeply inclined. In the southern mineralized zone, layers of foliated and gneissic or schistose granodiorite alternate. Stringers, lenses, and

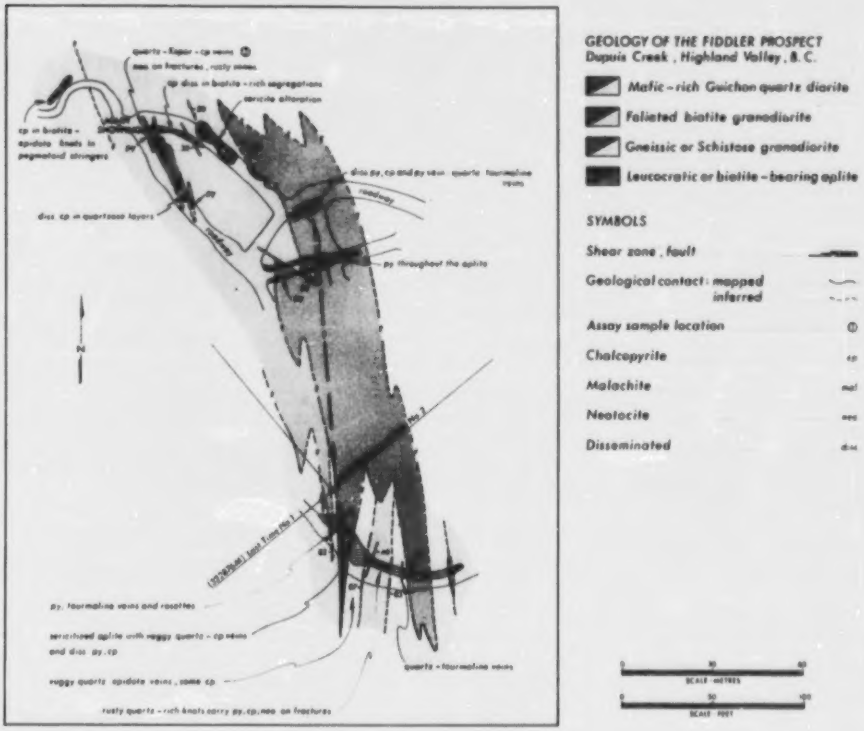

quartz - Kspar - cp veins
neo on fractures, rusty zones
cp diss in biotite - rich segregations
sericite alteration
cp in biotite - epidote knots in pegmatoid stringers
py
diss py, cp and py vein - quartz tourmaline veins
roadway
diss cp in quartzose layers
roadway
py throughout the aplite
N
no 2
(3272 ft) last 7 no 1
py, tourmaline veins and rosettes
sericitized aplite with vuggy quartz - cp veins and diss py, cp
vuggy quartz epidote veins, some cp
rusty quartz - rich knots carry py, cp, neo on fractures
quartz - tourmaline veins
GEOLOGY OF THE FIDDLER PROSPECT
Dupuis Creek, Highland Valley, B.C.
Mafic - rich Guichon quartz diorite
Foliated biotite granodiorite
Gneissic or Schistose granodiorite
Leucocratic or biotite - bearing aplite
SYMBOLS
Shear zone, fault
Geological contact: mapped
inferred
Assay sample location
Chalcopyrite
cp
Malachite
mal
Neotocite
neo
Disseminated
diss
0
30
60
SCALE - METRES
0
50
100
SCALE - FEET

Figure 17. Geology of the Fiddler prospect, Dupuis Creek, Highland Valley.

irregular larger bodies of aplite occur. Mainly they lie within the metamorphic foliation but larger bodies are locally crosscutting and contain inclusions of country rock. Biotite-rich and leucocratic varieties of aplite are often interlayered. The aplites are often pyritic and subgraphic or pegmatitic patches occur locally.

Sericite alteration occurs locally in both aplite and country rock and shear zones exhibit rusty weathering. However, much of the mineralization which occurs is not obviously related to alteration. Chalcopyrite occurs as disseminations in relatively fresh quartzose or biotite-rich zones in the granodiorite, as disseminations in biotite aplite, and in veins or pockets with quartz, quartz and pyrite, quartz and K-feldspar, or quartz and epidote. Barren veins comprise quartz-tourmaline with or without pyrite, pyrite-magnetite, and quartz-epidote. Many of the veins are vuggy. Some veins parallel foliation, others have shallow to moderate dips. A chip sample across a 75-centimetre (30-inch) veined, rusty mineralized zone returned an assay of 0.35 per cent copper with traces of gold and silver. Molybdenite mineralization is mentioned in the literature but none was seen.

Shear zones cut both the aplite and the country rock. Faults in the most prominent set, which have shear zones to 2.7 metres (9 feet) in width, strike northward and are steeply inclined, subparallel to foliation. Lesser shears have orientation 125 degrees to 150 degrees and generally moderate southwest dips. Shears are generally post-mineralization although they often contain copper oxides or malachite.

WORK DONE: No work was conducted during 1974.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1915, p. 234; 1965, p. 149; 1967, p. 161; 1968, p. 194; Northcote, K. E., 1969, *B.C. Dept. of Mines & Pet. Res.,* Bull. 56; Cockfield, W. E., 1948, *Geol. Surv., Canada,* Mem. 249, p. 124; Assessment Report 140, 180, 255, 1881.

BORNITE RIDGE (92I/SE-15) (Fig. B, No. 93)

By W. J. McMillan

LOCATION: Lat. 50° 25.5' Long. 120° 55.8' (92I/7W)
KAMLOOPS M.D. Ten miles southeast of the Bethlehem mine, at approximately 5,000 feet elevation.

CLAIMS: The showing is on the BOB 23 claim.

OPERATORS: HIGHMONT MINING CORP. LTD. and TECK CORPORATION LTD., 1199 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION:

PREVIOUS WORK: The showing was drilled by Jericho Mines Ltd. in 1960 with discouraging results. In 1966, the region around the showing was geologically mapped, soil samples were taken, and an induced polarization survey was conducted by Canadian Superior Exploration Limited. Two more holes were drilled by Teck Corporation Ltd. and Highmont Mining Corp. Ltd. in 1973.

GEOLOGY: Outcrops in the area around the showing consist of fine to medium-grained granodiorite of the Chataway variety of the Highland Valley phase of the Guichon Creek batholith. The rock contains 20 per cent hornblende which is blocky and relatively evenly distributed.

The showing consists of narrow, pinching and swelling, branching quartz veins ranging up to 20 centimetres in width which carry pockets of bornite with some chalcopyrite and tetrahedrite. Sulphides fill vugs in the quartz veins. Malachite stains fractures in the veins. The main set of veins occur within a limonitic shear zone (Fig. 18). Other quartz veins seen have narrow alteration envelopes. The mineralized zone trends north-northeast and can be traced for roughly 60 metres.

Typically the quartz veins have dip angles about 25 degrees toward the northwest but a few dip about 60 degrees. Two sets, one striking 010 to 020 degrees and the other 060 to 070 degrees, have gentle dips. Strikes for the only two moderately dipping veins encountered were 050 and 095 degrees.

In general, rocks adjacent to the showing have chloritized mafic minerals and incipient sericite alteration of plagioclase although they are not closely fractured. Some fractures have K-feldspar-epidote stringers along them, some have coarsely crystalline secondary K-feldspar with or without quartz and resemble pegmatite dykes, and others are coated by quartz-epidote or chlorite with some bornite. One thin quartz vein had epidote selvages and a pink K-feldspar envelope. Plagioclase is extensively sericitized and mafic

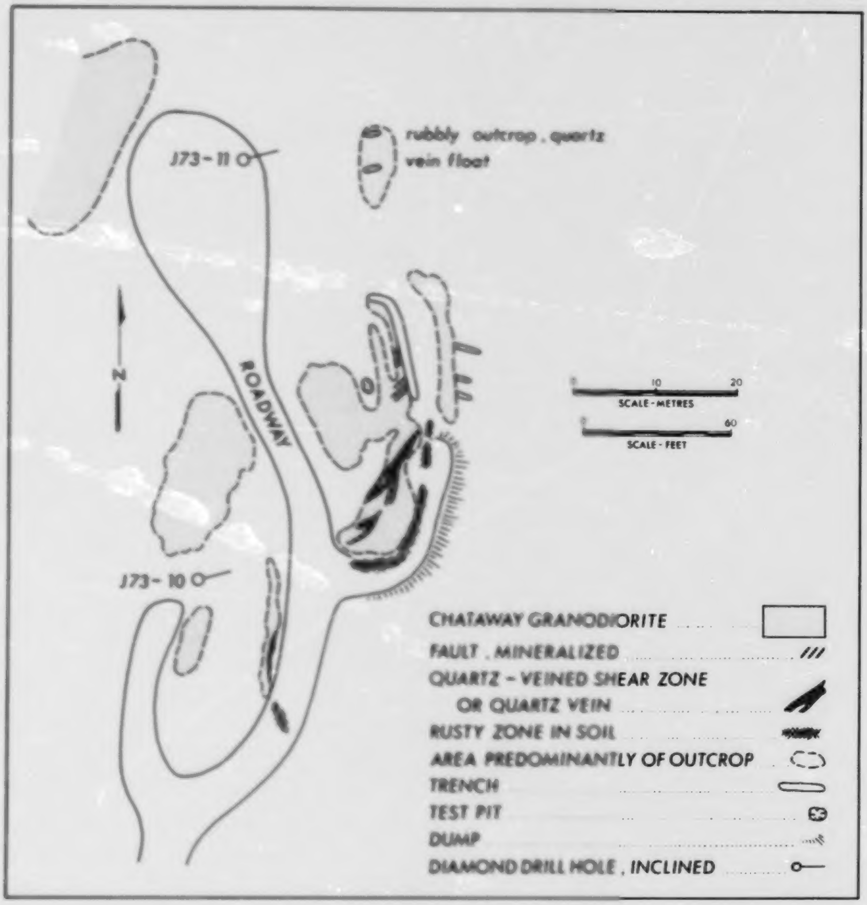

rubbly outcrop, quartz vein float
J73-11
J73-10
N
ROADWAY
0 10 20
SCALE - METRES
0 60
SCALE - FEET
CHATAWAY GRANODIORITE
FAULT, MINERALIZED
QUARTZ – VEINED SHEAR ZONE OR QUARTZ VEIN
RUSTY ZONE IN SOIL
AREA PREDOMINANTLY OF OUTCROP
TRENCH
TEST PIT
DUMP
DIAMOND DRILL HOLE, INCLINED

Figure 18. Geology of the Bornite Ridge showing, Highland Valley.

minerals are strongly chloritized close to veins and progressively less altered away from them. Carbonate stringers were seen in thin section and plagioclase adjacent to them was pervasively sericitized.

WORK DONE: No work was carried out during 1974.
REFERENCE: Assessment Report 922.

FHK (Fig. 8, No. 51)

LOCATION: Lat. 50° 26' Long. 120° 48' (92I/7W)
NICOLA M.D. Two and one-half miles due north of the north end of Mamit Lake, straddling the Mamit Lake road.
CLAIMS: FHK 1 to 10.
OWNER: EXEL EXPLORATIONS LTD., 8431 Granville Street, Vancouver.

(92I/7W)

DESCRIPTION: Two diamond-drill holes penetrated 212 and 207 feet of overburden but failed to reach bedrock.

WORK DONE: Surface diamond drilling, two BQ holes totalling 419 feet on FHK 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 174; Assessment Report 5015.

MX (Fig. B, No. 48)

LOCATION: Lat. 50° 26.4′ Long. 120° 48′ (92I/7W)
NICOLA and KAMLOOPS M.D. From 1.5 to 4 miles north of Mamit Lake, between 3,250 and 4,250 feet elevation.

CLAIMS: MX 1 to 69 (MX 7 to 47 cancelled).

OWNER: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: Virtually no outcrop on which to conduct geological determinations.

WORK DONE: Surface geological mapping, 1 inch equals 1,320 feet covering MX 39-69.

GAP (GAZA) (92I/SE-70) (Fig. B, No. 44)

By W. J. McMillan

LOCATION: Lat. 50° 26.8′ Long. 120° 56.8′ (92I/7W)
KAMLOOPS M.D. Highland Valley, immediately south of Indian Reserve 15, between 4,000 and 4,600 feet elevation.

CLAIMS: GAP 1 to 4, GAP Fraction, GAP 1 and 2 Fractions, NAT 1 to 22, NAT 2 and 3 Fractions, BUD 1 and 2, FARGO 15 to 19, JAMES 1 to 8, JIM 1 to 6, JIM Fraction, GEM 1 to 6, MARKS 8, HATCH 1, JERICHO 1 Fraction, JERICHO 12 to 24, 59 to 66, 76 to 87, and 90, BOB 1 to 28, GNAT 1 to 19 Fractions, STIBBARD 3 to 6, JC 1, HORN 4 and 6, HORN 17, 19 and 20 Fractions, DICK 1.

OWNERS: Jericho Mines Ltd., Gaza Mines Ltd., and Highmont Mining Corp. Ltd.

OPERATOR: HIGHMONT MINING CORP. LTD., Box 700, Ashcroft.

METALS: Copper, molybdenum.

DESCRIPTION:

PREVIOUS WORK: In 1968, 122 metres of percussion drilling was conducted near the main (Gaza-Gap) showing on claims Gap 1 and Gap 2 (formerly Nat 1 and 2 according to *Minsiter of Mines, B.C.,* Ann. Rept., 1968, p. 193). At that time an area over the showings 30 metres by 30 metres was stripped. In 1969 some bulldozer stripping was done, and an induced polarization survey of the claims was made. Eleven follow-up percussion holes with total length 1,050 metres were drilled on Gap 1 and 2 in 1970. Further exploration consisted of 20 percussion holes with total length 1,525 metres on the Nat and Bob claims in 1971, 640 metres more in seven holes on Nat 1, 2, 3, and 5 in 1972, and 700 metres of surface diamond drilling in seven holes in 1973. The northeastern claims were geochemically surveyed in 1974. Two small geochemical anomalies found on Nat 19 and 20 lie along a northeasterly trending lineation which passes through the Gaza-Gap showing.

(92I/7W)

GEOLOGY: The cleared area over the main showing in the property is crossed by the contact between Guichon and Chataway granodiorites. The Guichon variety contains unevenly distributed subhedral mafic minerals which often form small clusters. Quartz is between subhedral to euhedral plagioclase laths so tends to be wedge-shaped. Mafic minerals are slightly less abundant in the Chataway variety and tend to be blocky and evenly distributed. Quartz often has an amoeboid shape.

In the main showing Carr (*Minister of Mines, B.C.,* Ann. Rept., 1968, p. 193) reported malachite-bearing chloritized, sericitized shear zones to 0.6 metre in width with east-northeast trends. Fractures striking north-northeast and east have pink K-feldspar alteration envelopes and also carry malachite. Carr estimated the overall grade for the main showing to be 0.3 per cent copper.

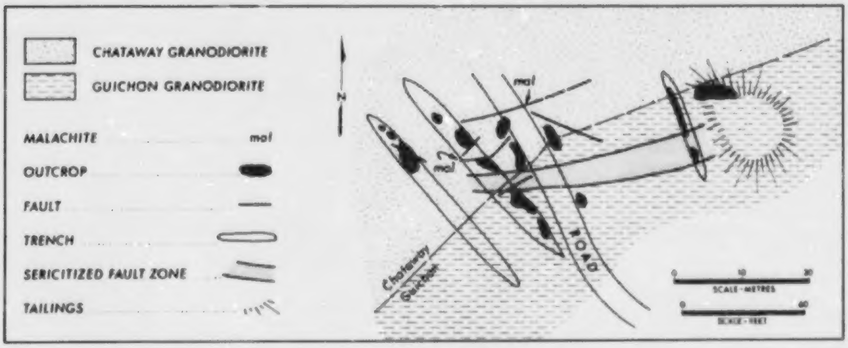


Figure 19. Geology of the main showing, Gap (Gaza) property, Highland Valley.

During this examination, the cleared area of the main showing and a 30-metre-long trench at its west edge were mapped. Little mineralization is now apparent on surface but malachite was seen in shear zones and some chalcopyrite was found on chlorite-coated fractures. Some fractures are coated by brick red stilbite and others by crumbly weathering heulandite. Quartz vein material carrying specularite was found in float.

The widest altered shear zone in the stripped area strikes 075 degrees and is 6 metres in width. Other fractures subparallel to this zone are also sericitized, chloritized, and malachite-bearing. A younger set of fractures striking 040 to 060 degrees cut the east-northeast fractures. The main mineralized shear zone is in Guichon granodiorite and is subparallel to the Guichon–Chataway contact east of the access road but crosses into Chataway granodiorite west of the road.

(92I/7W)

WORK DONE: Geochemical soil survey, 288 samples taken at 100 by 400-foot grid spacing covering Horn 4, 6, Horn 17, 19, 20 Fractions, Bud 2, Nat 9, 19-22, Dick 1, James 1-4, 6, and Gap Fraction.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 193; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 253; 1970, p. 345; 1971, p. 248; 1972, p. 169,; 1973, p. 175; Assessment Reports 1882, 2052, 5056.

SHEBA (92I/SE-10, 76, 81, 152) (Fig. B, No. 47)

LOCATION: Lat. 50° 27' Long. 120° 58' (92I/7W)
KAMLOOPS M.D. Thirty miles southeast of Ashcroft, on the north and east slopes of Gnawed Mountain, between 4,000 and 5,500 feet elevation.

CLAIMS: SHEBA 21 to 26, JAY 9 to 20, 101, JAY 104 Fraction, JJ 1 and 2 Fractions, DEE 1 and 3 Fractions, DO 1 to 6, DO 1 to 8 Fractions, LYNN 1 to 8, LYNN 7 and 10 Fractions, DAWN 1 to 8, ANN 1, 2, 5, 6, and 14-17 Fractions, VI 1 Fraction, J 1 to 8, 31, 32, 41, 42, J 33 to 38 and 40 Fractions, CU 1 to 6, 17 to 20, CS 1 and 3, CS 1 Fraction.

OWNER: Saba Copper Mines Limited.

OPERATOR: THE DOWA MINING CO., LTD., 1102, 1111 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, bornite, and molybdenite occur in veins and along fractures in propylitic and argillic alteration zones adjacent to fractures. The claims are underlain by granitic rocks of the Guichon Creek batholith. Rocks of the Skeena variety underlie the central part of the property and are flanked to the east by rocks of the Bethlehem phase. Farther east, the Bethlehem phase rocks give way to rocks of the Highland Valley phase.

WORK DONE: Surface diamond drilling, three holes totalling 2,088 feet on Lynn 7 Fraction, J 4, and J 6.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 175-177.

HI (WITCHES) (Fig. B, No. 87)

LOCATION: Lat. 50° 28' Long. 120° 59' (92I/7W)
KAMLOOPS M.D. In the Highland Valley, south of Witches Creek, three-quarters of a mile southwest of Indian Reserve 14.

CLAIM: HI 1 Fraction.

OWNER: JOHN B. LEPINSKI, Box 811, Ashcroft.

DESCRIPTION: Overburden exceeds 200 feet.

WORK DONE: Percussion drilling, two holes totalling 300 feet.

REFERENCE: Assessment Report 5332.

(92I/7W)

BETHLEHEM MINE (92I/SE-1, 2, 3, 4, 6) (Fig. B, No. 40)

By E. Sadar

LOCATION: Lat. 50° 29.5' Long. 120° 59' (92I/7W)
KAMLOOPS M.D. On the north side of Highland Valley, 2 miles east of Quiltanton Lake.

CLAIMS: The company owns 56 Crown-granted claims, one mineral lease comprising 18 claims, and 342 located claims. The company controls another 14 claims through agreement. The key claims are the SJ 3 to 6, 15 to 18, 20, 34, 35, 45, 102 Fraction, 109 Fraction, 116 Fraction and JC 46 and 48 (all Crown-granted claims).

OWNER: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8; mine address, Box 520, Ashcroft VOK 1A0.

METAL: Copper (production shown on Table 6).

DESCRIPTION:

HUESTIS PIT: The Huestis orebody occurs along the contact between the Bethlehem and Guichon quartz diorites. The majority of the orebody occurs in the Bethlehem quartz diorite with only minor mineralization being in the Guichon quartz diorite to the west and northwest.

This is a true crackle breccia-type porphyry copper deposit where the host rock has been highly fractured and mineralization has been widespread and of fairly even content. The orebody is circular in shape and exhibits the usual peripheral propylitic alteration along with the inner zone of sericite alteration.

Unlike the Iona zone, this deposit has a distinct, though of restricted size, pyrite halo that surrounds the orebody. The main copper mineral is chalcopyrite with lesser amounts of bornite. The majority of the deposit's oxide capping has been removed by glaciation.

JERSEY PIT: The Jersey orebody occurs in three rock types: Bethlehem quartz diorite, Guichon quartz diorite, and breccia. The deposit straddles the irregular contact between the Guichon and Bethlehem quartz diorite, is roughly circular, and exhibits many features of a typical porphyry copper deposit. It contains a weak pyrite halo, peripheral propylitic alteration, and an inner zone of quartz-sericite alteration.

The main copper minerals are chalcopyrite and to a lesser extent bornite. Molybdenite also occurs in minor amounts in the Jersey orebody.

IONA ZONE: The deposit is mostly confined to a northerly trending pear-shaped breccia zone. This is a true breccia pipe deposit, because it has vugs, mushrooms near the surface, narrows with depth, and contains fragments of most major rock types found on the property.

The mineralization consists mainly of bornite and chalcopyrite in varying ratios along with minor amounts of molybdenite and chalcocite. The deposit also contains a very extensive oxide zone which reaches depths of over 200 feet.

The irregular occurrence of the breccia zone is reflected by the erratic outline of the orebody, which, as previously mentioned, is confined mostly to the breccia.

WORK DONE:

The mine continued to work on a three-shift basis with ore production coming primarily from the Huestis pit and waste was removed from the Huestis, Jersey, and Iona pits.

(92I/7W)

Major work carried out during the year included: (a) construction of a new mine maintenance shop made necessary by the planned expansion of the Jersey pit; (b) completion of stage 3 (final) of the Bose Lake saddle dam in the tailings disposal system; and (c) commencement of work on the relocation of the freshwater reservoir also necessitated by the Jersey expansion. Exploration investigations were continued on both the Jersey and Iona zones during the first six months of the year. Two NQ diamond-drill holes, totalling 1,391 feet, were completed on SJ 3 and 5 claims.

Major mine equipment in service included: five 100-ton haulge units; twenty-four 50-ton haulage units; one Bucyrus-Erie model 195-B, 12-cubic-yard electric shovel; three Bucyrus-Erie model 88-B, 5.5-cubic-yard diesel shovels; four Michigan model 475, 12-cubic-yard front-end loaders; two Bucyrus-Erie model 45-R diesel electric rotary drills; three D-8 Caterpillar tractor bulldozers; two Caterpillar model 824, rubber-tired bulldozers; two Caterpillar model 14-E motor graders.

Concentrator throughput averaged 17,387 dry tons per calendar day.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 179; Assessment Report 5270.

KR&K (CHARTRAND CREEK) (Fig. B, No. 50)

LOCATION: Lat. 50° 29′ Long. 120° 48′ (92I/7W)
KAMLOOPS M.D. Approximately 35 miles southwest of Kamloops, immediately south and west of Logan Lake.
CLAIMS: KR&K 1, 2, 9 to 21, 23 to 38.
OWNER: NICOLA COPPER MINES LTD., 9897 – 138A Street, Surrey.
DESCRIPTION: No bedrock was encountered.
WORK DONE: Percussion drilling, four holes totalling 480 feet on KR&K 1 and 11.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 179; Assessment Report 4968

REY, RL (92I/SE-160) (Fig. B, No. 39)

LOCATION: Lat. 50° 20′ Long. 120° 42′ (92I/7E)
NICOLA M.D. Sixteen miles north of Merritt, covering and immediately south of Rey Lake, at approximately 4,400 feet elevation.
CLAIMS: REY 3 to 8, 33 to 56, 133 to 152, 201 to 244, REY 15 and 20 Fractions, RL 1 to 20.
OWNER: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.
METALS: Copper, molybdenum.
DESCRIPTION: Quartz monzonite porphyry is cut by fine-grained feldspar porphyry and felsite dykes. Chalcopyrite and molybdenite occur on fractures with quartz and pyrite. Diamond-drill hole bottomed in andesitic country rocks.
WORK DONE: Surface diamond drilling, one BQ hole totalling 883 feet on Rey 207.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 181-184; Assessment Report 5320.

DES (Fig. B, No. 38)

LOCATION: Lat. 50° 26′ Long. 125° 34′ (92I/7E)
KAMLOOPS M.D. Four miles west-southwest of Lac Le Jeune, 2 miles due east of Desmond Lake.

CLAIMS: DES 1 to 36.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver V6B 3T5.

DESCRIPTION: The claims are underlain by Late Triassic Nicola Group andesites and some augite porphyry.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; IP survey, 12 line-miles, 800-foot grid spacing; and magnetometer survey, 12 line-miles, 800-foot grid spacing covering Des 1-8, 10, 12-34, and 36; VLF EM survey, 5.4 line-miles, 800-foot grid spacing covering Des 17, 19, 21-34 and 36; geochemical soil survey, 12 line-miles, 800-foot grid spacing, 300 samples covering Des 1-8, 10, 12-34, and 36.

MAX (Fig. B, No. 41)

LOCATION: Lat. 50° 28′ Long. 120° 34′ (92I/7E)
KAMLOOPS M.D. Approximately 20 miles south of Kamloops, 1 mile southwest of Walloper Lake.

CLAIMS: MAX 1 to 20.

OWNER: HOST VENTURES LTD., 101, 325 Howe Street, Vanouver.

DESCRIPTION: The claims are underlain by rocks of the Upper Triassic Nicola Group.

WORK DONE: Magnetometer survey, 14 line-miles and geochemical soil survey, 140 samples taken at 200 by 800-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 185; Assessment Report 4948.

ENTERPRISE, JOHANNESBURG (92I/SE-28, 29, 31, 32, 108 to 114, 162)
(Fig. B, No. 57)

LOCATION: Lat. 50° 21′ Long. 120° 22′ (92I/8W)
NICOLA M.D. Twenty-four miles northeast of Merritt, immediately south of the south half of Stump Lake.

CLAIMS: GENTLE ANNIE, BELLE SCOTT, NO SURRENDER, KING WILLIAM, PLANET 1, SILVER KING 2, SILVER STAR, NEW STAR 2 Fraction, SILVER KING EXTENSION, DAY STAR, C Fraction, ESTHER M Fraction, GEORGINA M Fraction, MARION C Fraction, JESSIE B, RAVEN 2, RUBY M Fraction STAR 1 Fraction, SUN, MOON, RAVEN, E Fraction, IXL 6, MAYBELLE Fraction, NELS Fraction, L Fraction, M Fraction, SHEELAH, BIG SANDY, WREN, BRIAN, DOROTHY, BLUEBIRD, THE GARDEN 1, PARKVIEW 3, JENNY LONG, BEE 7.

OWNER: William Takeshita.

OPERATOR: JUNIPER MINES LTD., 107, 325 Howe Street, Vancouver.

(92I/8W)

METALS: Gold, silver, lead.

DESCRIPTION: Nicola greenstone is cut by numerous fractures and shear zones and is more or less altered to carbonate along them. The fractures contain veins and lenses of quartz, which carry variable amounts of pyrite and galena and less sphalerite, chalcopyrite, and malachite. In part, the claims cover the old Enterprise workings. The old workings tested quartz veins carrying irregularly distributed pyrite, galena, sphalerite, tetrahedrite, and chalcopyrite. Wallrocks were bleached and pyritized adjacent to veins. Gold and silver were the economic minerals sought.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; linecutting, 36.5 miles of grid; 56 rock samples taken and assayed.

REFERENCES: *Minister of Mines, B.C.*, 1936, pp. D14-D21; *Geol. Surv., Canada*, Mem 249, 1948, pp. 47-55; Assessment Report 5152.

ULLA (Fig. B, No. 56)

LOCATION: Lat. 50° 23' Long. 120° 27' (92I/8W)
NICOLA M.D. Three miles northwest of Stump Lake.

CLAIMS: ULLA 1 to 14, ULLA 15 Fraction.

OWNER: ENVOY RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.

DESCRIPTION: The claims extend across the contact between biotite granite of the central Nicola batholith and metasedimentary rocks of probable Paleozoic age.

WORK DONE: Geochemical soil survey, 457 samples taken at 100 by 800-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 191; Assessment Report 4976.

DERBY (Fig. B, No. 54)

LOCATION: Lat. 50° 25' Long. 120° 24' (92I/8W)
KAMLOOPS M.D. Six miles southeast of La Le Jeune, on the east side of Moore Creek.

CLAIMS: DERBY 1 to 22.

OWNER: MONITOR RESOURCES LTD., 101, 535 Thurlow Street, Vancouver.

DESCRIPTION: Nicola andesite and basalt are intruded by a small body of microdiorite and are variably propylitized.

WORK DONE: Geochemical soil survey, 479 samples taken at 200 by 400-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 192; Assessment Report 4928.

EM, MARN (Fig. B, No. 64)

LOCATION: Lat. 50° 30' Long. 120° 14' (92I/9E)
KAMLOOPS M.D. Approximately 16 miles south-southeast of Kamloops, 1 mile southeast of Shumway Lake.

(92I/9W)

CLAIMS: MARN 1 to 16, EM 1 to 14.

OWNER: RIMCO RESOURCES LTD., 330, 890 West Pender Street, Vancouver.

WORK DONE: Linecutting, 13.7 miles of grid; geochemical soil survey, 200 samples taken at 200 by 800-foot grid spacing covering central half of EM 1-14 and Marn 1-16.

REFERENCE: Assessment Report 5046.

MIX (Fig. B, No. 74)

LOCATION: Lat. 50° 35' Long. 120° 24' (92I/9W)
KAMLOOPS M.D. Seven miles south-southwest of Kamloops, 2 miles south of Jacko Lake.

CLAIMS: MIX 1 to 9, 37 and 38.

OWNER: Continental Potash Corporation Limited.

OPERATOR: SENECA DEVELOPMENTS LTD., 2050, 200 Granville Street, Vancouver.

DESCRIPTION: Traces of copper occur in Upper Triassic volcanic rocks.

WORK DONE: Surface geological mapping covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 192.

RAINBOW (92I/NE-27, 28) (Fig. B, No. 66)

LOCATION: Lat. 50° 38' Long. 120° 28' (92I/9W)
KAMLOOPS M.D. Approximately 7 miles west of Kamloops and 1 mile due north of Sugarloaf Hill, at about 3,000 feet elevation.

CLAIMS: RAINBOW 1 to 23, 51, 221, LAPS 13, 35, 37, 39, 41-45, 47, 48, NATIVE 1, 4, and 6 Fractions, PATCH UP 3 and 4, DING 1 and 2 Fractions, Lot 883, LEE 1 to 8, LEE 1 to 8, 10, 16 to 18 Fractions.

OWNER: Leemac Mines Ltd.

OPERATOR: GETTY MINING PACIFIC, LIMITED, 614, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs as disseminations and fracture fillings in dioritic rocks of the Iron Mask batholith.

WORK DONE: Surface diamond drilling, one NQ hole totalling 1,028 feet on Rainbow 17.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 197; Assessment Report 5165.

IRON MASK, DM (92I/NE-8, 10, 11, 18, 26, 30, 74) (Fig. B, No. 65)

LOCATION: Lat. 50° 40' Long. 120° 27' (92I/9W)
KAMLOOPS M.D. About 7 miles west of Kamloops, south of the Trans-Canada Highway and immediately east of the Afton property, at approximately 2,500 feet elevation.

(92I/10E)

CLAIMS: DM 55 to 57, 61 to 64, 71, 73, 75, 77, 96 to 99, 120, 121, DM 2, 3, 5, 94, 95, 99, and 124 Fractions, LORNA 1 to 4, AUDRA 1 Fraction, RO 5, 7 to 26, ID 3, 5, 6, and 16 Fractions, A 1 to 10, 12, 13, 15, 16, A 1 to 3 Fractions, AA 1 and 2, REX 4 to 6 Fractions, REX 7, DELLA 2 and 3 Fractions, DEN 4 and 5 Fractions, JAN 1 to 3, JAN 4 to 8 Fractions, MRO 1 to 8, 10 to 12, 13, and 14 Fractions, IRON CAP (Mineral Lease M-21), ERIN FR. (Lot 1066), NORMA (Lot 1302), IRON MASK (Lot 878), SUNRISE (Lot 879), COPPER QUEEN (Lot 880), CIVIL FR. (Lot 1068), VICTOR (Lot 1340), MINT FR. (Lot 1342), EARNSCLIFFE (Lot 1301), EMORY (Lot 1050), NIGHTHAWK (Lot 1747), LUCKY STRIKE (Lot 1036), JUMBO FR. (Lot 1067), CHAMPION NO. 1 (Lot 5622), CHAMPION NO. 2 FR. (Lot 5623), LS 6 (Lot 5624), LS 7 (Lot 5625), LS 8 (Lot 5628), LS 9 (Lot 5629), LS 10 (Lot 5627), LS 11 (Lot 5626), WINTY (Lot 4667), CON VERDANT (Lot 1341), MAY FR. (Lot 1311), SODIUM FR. (Lot 4666).

OWNER: Comet Industries Ltd.

OPERATOR: GETTY MINING PACIFIC, LIMITED, 614, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs as disseminations and fracture fillings in altered diorite of the Iron Mask batholith.

WORK DONE: IP survey, 4.5 line-miles, 600-foot grid spacing; surface diamond drilling, two NQ holes totalling 1,852 feet on DM 96 and Jan 3.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 199; Assessment Report 5180.

AFTON (92I/NE-23, 113) (Fig. B, No. 67)

LOCATION: Lat. 50° 39′ Long. 120° 31′ (92I/10E)
KAMLOOPS M.D. Eight to 10 miles west of the centre of Kamloops, south of the Trans-Canada Highway, at approximately 2,100 feet elevation.

CLAIMS: AFTON 1 to 7, AFTON Fraction, ADD 1 to 30, ADD 1 Fraction, POT 5, 6, 8, 9, 11 to 14, POT 3, 4, 10, 15, and 17 Fractions, TOP 1, 3, and 4 Fractions, BERNIE 7, 8, and 10 Fractions, BERNIE 9, AD 1 Fraction, ON TOP 1 and 2 Fractions, Mineral Lease M-22 (DOMINION, Lot 1595).

OWNER: AFTON MINES LTD., 1199 West Hastings Street, Vancouver V6E 2K5.

METALS: Copper, gold, silver.

DESCRIPTION: Native copper, chalcocite, bornite, chalcopyrite, pyrite, cuprite, covellite, malachite, and azurite occur on the Afton claims. The Iron Mask batholith of Late Triassic age is the dominant geological feature and host of the copper deposits in the area. It is a multi-intrusive complex which intrudes the Upper Triassic Nicola Group of volcanic rocks and is overlain in some places by the Kamloops Group of sedimentary and volcanic rocks.

WORK DONE: Surface diamond drilling, one BQ hole totalling 500 feet on Add 28; rotary drilling, one hole totalling 1,000 feet; percussion drilling, five holes totalling 1,500 feet plus an additional six holes totalling 605 feet for foundation testing; claims surveyed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 209-220; 1973, p. 201; Assessment Report 5271.

PAM (Fig. B, No. 71)

LOCATION: Lat. 50° 42′ Long. 120° 39′ (92I/10E)
KAMLOOPS M.D. Approximately 5 miles south of Kamloops Lake, on Duffy Creek, due west of Beaton Lake, between 2,500 and 3,500 feet elevation.

CLAIMS: PAM 1 to 14.

OWNER: Richard D. Kantor.

OPERATOR: ABCO PETROLEUMS LTD., c/o 41, 815 Palliser Drive SW., Calgary, Alta.

WORK DONE: Linecutting, 19.9 line-miles of grid; magnetometer survey, 18.3 line-miles; frequency-domain IP survey, 0.75 line-mile covering all claims.

REFERENCE: Assessment Report 4997.

XY (Fig. B, No. 70)

LOCATION: Lat. 50° 30′ Long. 120° 52′ (92I/10W)
KAMLOOPS M.D. On the west side of the Guichon Creek valley, 4 miles easterly from Bose Lake.

CLAIMS: XY 1, 2, 5, 7, 9 to 28.

OWNER: COMET INDUSTRIES LTD., 2502, 1177 West Hastings Street, Vancouver.

DESCRIPTION: Overburden ranges from 7 to 20 feet.

WORK DONE: Percussion drilling, seven holes totalling 1,470 feet on XY 20, 21, and 22.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 180; Assessment Report 4983.

DANSEY (92I/NE-34) (Fig. B, No. 72)

LOCATION: Lat. 50° 31′ Long. 120° 52′ (92I/10W)
KAMLOOPS M.D. On the west side of Guichon Creek valley, 4 miles easterly from Bose Lake.

CLAIMS: TOM 1 to 20.

OWNER: NORTH PACIFIC MINES LTD., 2502, 1177 West Hastings Street, Vancouver.

METAL: Copper.

(92I/10W)

DESCRIPTION: Overburden varies from 5 feet to in excess of 50 feet. Chalcopyrite occurs in shears cutting at least two phases of the Guichon Creek batholith.

WORK DONE: Percussion drilling, five holes totalling 1,260 feet on Tom 7.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1907, p. 136; Assessment Report 4984.

OUTRIDER (92I/NE-41) (Fig. B, No. 69)

LOCATION: Lat. 50° 31′ Long. 120° 59′ (92I/10W)
KAMLOOPS M.D. Approximately 3,000 feet west of Bose Lake and 6,000 feet north-northeast of the Bethlehem concentrator, between 4,800 and 4,850 feet elevation.

CLAIMS: OUTRIDER 13, 15, 16 to 22, 24, BAY 1 and 2 Fractions, BAY 16, 18, 19, 21, 23, 29 to 31, DAVE 2, 4 to 12, 14 to 24, 27 to 33, 35, 42, LODGE 1 to 6, 13 to 15, 17, 19, 21, 24, 33, 34, 154 to 160, LODGE 1 and 153 Fractions, SD 5 to 10, KB 1 to 4, BAD 12, B, D, and F Fractions, COW 1 to 8.

OWNER: Valley Copper Mines Limited.

OPERATORS: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8 and COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization is rare and consists of occasional specks of pyrite, chalcopyrite, and molybdenite. Both percussion holes intersected granodiorite of the Guichon Creek batholith.

WORK DONE: Bethlehem Copper Corporation – percussion drilling, two holes totalling 700 feet on SD 5 and Lodge 13; Cominco Ltd. – frequency-domain IP survey, 2.25 line-miles, 400-foot grid spacing covering SD 5, 6 and Lodge 13, 14.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 203.

BCD (Fig. B, No. 68)

LOCATION: Lat. 50° 33′ Long. 120° 54′ (92I/10W)
KAMLOOPS M.D. Three and one-quarter miles east-northeast of Bose Lake, on Axe Creek.

CLAIMS: BCD 1, 3, 5, 7, 9, 11, 13 to 22, 24, 27 to 34, 38.

OWNER: COMET INDUSTRIES LTD., 2502, 1177 West Hastings Street, Vancouver.

DESCRIPTION: Overburden averages 15 feet.

WORK DONE: Percussion drilling, nine holes totalling 2,500 feet on BCD 5, 6, and 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 204; Assessment Report 5065.

RED, LUV (Fig. B, No. 78) By W. J. McMillan

LOCATION: Lat. 50° 33.5′ Long. 121° 16′ (92I/11)
KAMLOOPS M.D. Approximately 1 mile east of the Lornex pumphouse near Spatsum, on Thompson River.

CLAIMS: RED 23 to 28, 36 to 42, 49 to 58, LUV 1 to 18, 20 to 29.

OWNER: LORNEX MINING CORPORATION LTD., 202, 580 Granville Street, Vancouver V6C 1W8.

METALS: Copper, iron.

DESCRIPTION:

The western claims are underlain by Late Triassic tuffs and fragmental volcanic rocks of the Nicola Group which are intruded and metamorphosed by rocks of the so-called Spatsum granite and the Guichon Creek batholith. The eastern claims are underlain by rocks of the border phase of the batholith. Some pyrite is disseminated in Nicola rocks adjacent to intrusive contacts.

No mineralization is reported but gossans on the adjoining Terry claims to the west were trenched and drilled in 1967 by Largo Mines Ltd. On the Terry claims magnetite, malachite, and chalcopyrite occur with epidote and pyrite in shear zones.

WORK DONE: Surface geological mapping, 1 inch equals 600 feet and geochemical soil survey, 137 samples taken along 2.2 line-miles at 100-foot intervals along four reconnaissance lines covering LUV 1, 2, 7, 8, 10, 13-22, 25-29 and Red 25-27, 36-42, 49-54.

REFERENCE: Assessment Report 5131.

CREEP, LE (Fig. B, No. 77)

LOCATION: Lat. 50° 34′ Long. 121° 01′ (92I/11E)
KAMLOOPS M.D. West slope of Forge Mountain, at the head of Burr Creek.

CLAIMS: CREEP, LE, HUB, totalling approximately 40.

OWNER: Getty Mining Pacific, Limited.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver.

DESCRIPTION: Depth of overburden varies from 10 to 100 feet.

WORK DONE: Percussion drilling, 16 holes totalling 4,972 feet on Creep 3 and Le 65.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 223; Assessment Report 4924.

GLOSSY (92I/NW-11) (Fig. B, No. 89) By W. J. McMillan

LOCATION: Lat. 50° 35′ Long. 121° 05′ (92I/11E)
KAMLOOPS M.D. The main showings are on Crown-granted Lot 4574 (Forge); adjacent Lots 4575 to 4577 (Cinder, Glossie, Glossie Fraction) also remain in good standing. The showings are at 1,675 metres (5,500 feet) elevation on the southeast flank of Glossy Mountain and northeast of Cinder Hill. A four-wheel-drive vehicle road from the Ashcroft-Logan Lake Highway about 1 kilometre east of Woods Creek leads to the property.

(92I/11E)

CLAIMS: GLOSSIE (Lot 4576), FORGE (Lot 4574), CINDER (Lot 4575), GLOSSIE Fraction (Lot 4577), SAPPHIRE, TURQUOISE.

METALS: Copper, gold, silver.

DESCRIPTION:

HISTORY: The claims were first staked in 1904 when some trenching was done. In 1915 the Forge shaft (Fig. 20) which is apparently 30 metres (100 feet) deep (Duffell and McTaggart, 1952, p. 100) and the eastern shaft which is about 9 metres (30 feet) deep were sunk and several exploration pits were dug. The eastern shaft explored a 1.5-metre (5-foot) thick vein with strike 110 degrees and dip 70 degrees toward the north. Apparently it is a continuation of the vein tested by the Forge shaft. Also in 1915, 19.8 tonnes (21.8 tons) of hand-selected ore was shipped to the Tacoma smelter. Assay returns were 0.94 gram per tonne (0.03 ounce per ton) gold; 86.25 grams per tonne (2.76 ounces per ton) silver; and 12.62 per cent copper. The property has been inactive since that time although work has been done on contiguous claims.

GENERAL GEOLOGY: The area of the workings is underlain by granodiorite to quartz diorite of the Guichon variety of the Guichon Creek batholith which is cut by a dyke or small plug of quartz plagioclase porphyry.

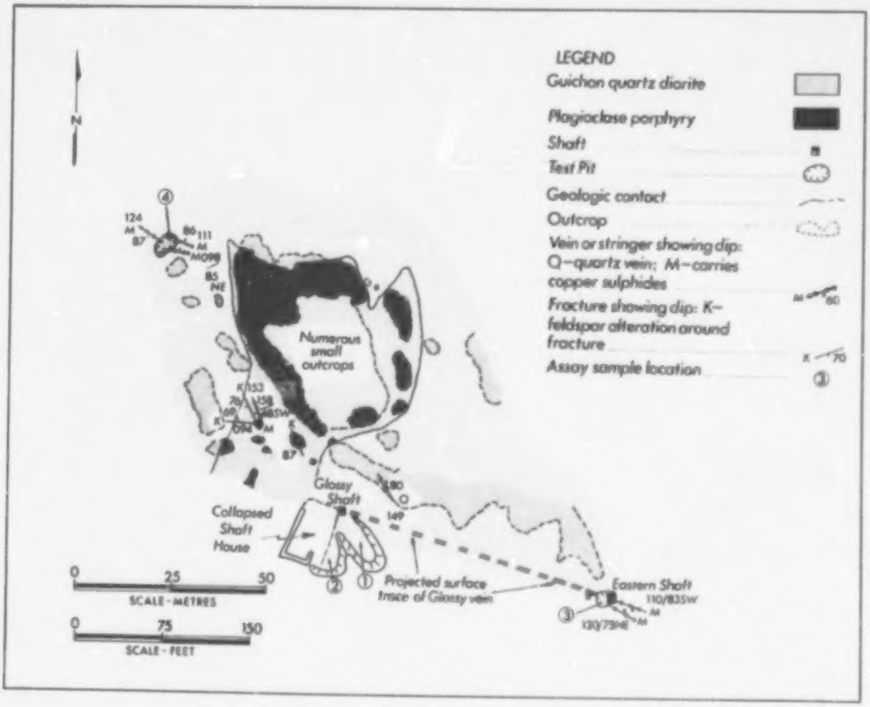

N
LEGEND
Guichon quartz diorite
Plagioclase porphyry
Shaft
Test Pit
Geologic contact
Outcrop
Vein or stringer showing dip: Q—quartz vein; M—carries copper sulphides
M 60
Fracture showing dip: K—feldspar alteration around fracture
K 70
Assay sample location
③
④
124
M
87
86
111
M
MO98
85
NE
Numerous small outcrops
K/153
76
158
85SW
69
K
O94
M
K
87
Glossy Shaft
80
Q
149
Collapsed Shaft House
②
①
Projected surface trace of Glossy vein
Eastern Shaft
110/83SW
M
M
③
130/75NE
0
25
50
SCALE - METRES
0
75
150
SCALE - FEET

Figure 20. Geology of the Glossy mineral showing, Highland Valley.

The Guichon rocks generally vary from fine to medium grained but are coarse grained locally. Mafic content averages 25 per cent but reaches 35 per cent in coarse-grained outcrops. Mafic minerals usually occur as euhedral, rather ragged crystals which tend to group in small, unevenly distributed clusters. Locally either bornite or hornblende predominate. Quartz crystals are usually wedge shaped, occurring in spaces between subhedral plagioclase laths. K-feldspar, which is normally less than 10 per cent of the rock, is also interstitial but locally forms poikilitic coarse-grained crystals.

The porphyry is rich in K-feldspar. Its matrix consists of intergrown rounded quartz, K-feldspar, and plagioclase. Phenocrysts are subhedral to euhedral and consist of plagioclase and mafic minerals. Where the percentage of phenocrysts is high, the porphyry and Guichon country rock can be difficult to distinguish. However, contacts between the two are sharp though not chilled. Chalcopyrite replaces mafic minerals locally in the porphyry and less commonly in Guichon granodiorite adjacent to the porphyry.

MINERALIZATION: Mineralization is fracture controlled and occurs in veins and as fracture coatings. Bornite is the predominant primary copper sulphide but there is some chalcopyrite. Chrysocolla is the predominant secondary copper mineral but there is some chalcocite which is probably secondary.

Predominant gangue minerals are quartz, tourmaline, and calcite. In some instances, veins are zoned with rims of quartz-tourmaline cut by calcite veins to cores of coarse-grained calcite containing pods of bornite and chalcocite. Where they occur together, chrysocolla veins cross quartz-tourmaline veins. Thin section study of veins shows several stages of fracturing and vein formation. For example, in some samples calcite veins have been broken then recemented by quartz-tourmaline zones carrying pods of bornite. In another vein, silicified, tourmalinized fragments occur in a quartz-tourmaline matrix which is cut by two younger stages of very fine-grained quartz veins. Veins often display cockscomb texture, have quartz crystals with euhedral terminations, and are vuggy. Sulphides tend to be late and fill vugs.

ALTERATION: Near the porphyry, some fractures have associated K-feldspar alteration. Adjacent to veins both pink K-feldspar and greenish sericite-carbonate alteration occur. Alteration zones are roughly the width of the associated veins, that is, 1 to 30 centimetres. Elsewhere the rock is relatively fresh although mafic minerals are locally chloritized and some quartz-epidote stringers were found.

ORIENTATION OF VEINS: Veins in the area of the workings typically strike southeastward. In the pits and adjacent to the eastern shaft most veins trend 100 to 120 degrees with steep dips. The various showings appear to lie along a general zone of fracturing of this trend. It is possible that volatiles from the porphyry caused mineralization although the porphyry itself is locally mineralized in the general zone of fracturing.

GRADES: Three samples from dumps adjacent to the two shafts and a chip sample across a 30-centimetre (12-inch) vein in a test pit were assayed for copper, gold, and silver. Gold values range from trace to 0.55 gram per tonne (0.02 ounce per ton); silver trace to 20 grams per tonne (0.7 ounces per ton); and copper from 0.67 to almost 6 per cent (see table).

No.	Location	Type of Sample	Copper *per cent*	Gold *g/tonne*	Silver *g/tonne*
1	Glossy shaft	12 grab samples randomly from dump	0.67	trace	trace
2	Glossy shaft	12 grab samples randomly from dump	2.10	trace	trace
3	eastern shaft	12 grab samples randomly from dump	3.90	0.62	15.45
4	test pit	chip sample across 30-centimetre vein	5.70	0.62	21.63

WORK DONE: The property has been inactive since 1915.

REFERENCES: Duffell, S. and McTaggart, K. C., 1952, Ashcroft Map-area, B.C., *Geol. Surv., Canada,* Mem. 262; *Minister of Mines, B.C.,* Ann. Rept., 1915, pp. 269,276, 277; 1916, p. 265; 1917, p. 225; 1924, p. 140.

RED HILL (92I/NW-42) (Fig. B, No. 76)

LOCATION: Lat. 50° 39′ Long. 121° 19′ (92I/11W)
KAMLOOPS M.D. Eleven miles south of Cache Creek, on the west side of the Thompson River valley, between 1,300 and 2,000 feet elevation.

CLAIMS: MAP 1 to 32.

OWNER: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METAL: Copper.

DESCRIPTION:

Geological mapping was conducted in the area by Duffell and McTaggart in 1951 and by Carr in 1962 (*Minister of Mines,* Ann. Rept.). The claims are largely underlain by altered rocks of the Cache Creek Group including volcanic rocks, quartzite, chlorite and sericite schists, and minor limestone.

The southwest part of the claim block is underlain by a large gossan zone. Rocks in the gossan are chiefly pale grey to whitish sheared rhyolites and quartzites. Further north, these rocks grade into only slightly green-grey volcanic rocks with local porphyritic textures. Still further north these rocks are cut by quartz diorite, presumably an offshoot of the Guichon Creek batholith. The intrusive rock is fine to medium grained with chloritized anhedral mafic minerals. Some fine-grained quartz crystals are visible under the hand lens. The rock is generally weakly magnetic. North of the intrusive rock, chlorite schist predominates and minor limestone occurs. To the north, these rocks grade into a gossan zone which consists of similar rocks. Outcrops on the northwest part of the claims consist of dark green foliated volcanic rocks. Foliation in the Cache Creek rocks strikes northwest and dips southwest.

Overburden encountered during drilling ranged from 70 to more than 110 feet. The first two drill holes encountered impure limestone and greenstone which carry disseminated pyrite with minor amounts of chalcopyrite and molybdenite.

(92I/12E)

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering Map 1-20; geochemical soil survey, 31 samples taken at random covering Map 1-20; percussion drilling, three holes totalling 580 feet on Map 4, 12, and 16.

REFERENCES: Duffell, S. and McTaggart, K. C., 1952, Ashcroft Map-area, B.C., *Geol. Surv., Canada,* Mem. 262; *Minister of Mines, B.C.,* Ann. Rept., 1962, p. 28; 1971, p. 299 (M Claims); Assessment Report 5308.

B, C (92I/NW-54) (Fig. B, No. 79)

LOCATION: Lat. 50° 31' Long. 121° 40' (92I/12E)
KAMLOOPS M.D. Twenty miles north of Lytton, on east side of McGillivray Creek, at approximately 4,500 feet elevation.

CLAIMS: A 1 to 16, B 1 to 16, C 1 to 6, O 1 to 4.

OWNER: ACACIA MINERAL DEVELOPMENT CORPORATION LTD., 429, 470 Granville Street, Vancouver.

METALS: Copper, gold, silver.

DESCRIPTION: Copper mineralization occurs in feldspar porphyry dykes, in adjacent andesitic volcanic rocks, and, rarely, in limestone adjacent to dykes. Pyrite also occurs in the andesites. The country rocks are apparently members of the Cretaceous Spences Bridge Group (Duffell and McTaggart, *Geol. Surv., Canada,* Map 1010A).

WORK DONE: Trenching, 2,000 feet on B 8, 10, C 2, 4, and O 2, 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 228.

SALLUS (92I/NW-16) (Fig. B, No. 80)

LOCATION: Lat. 50° 47' Long. 121° 48' (92I/13W)
LILLOOET M.D. Ten miles northeast of Lillooet, on Gibbs and Sallus Creeks, between 2,000 and 5,500 feet elevation.

CLAIMS: SALLUS 1 to 126.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, Box 1500, Asbestos, P.Q.

METALS: Copper, zinc, molybdenum, gold.

DESCRIPTION: The claims are underlain by rocks of the Cache Creek Group (*Geol. Surv., Canada,* Map 1010A).

WORK DONE: Geochemical survey, 121 samples covering Sallus 116, 121, 123; percussion drilling, 25 holes totalling 1,426 feet on same claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 210.

PAW, RANGER (Fig. B, No. 82)

LOCATION: Lat. 50° 59' Long. 121° 30' (92I/13E, 14W)
CLINTON and KAMLOOPS M.D. North of the Maggie mine area, approximately 5 miles south of Clinton on Highway 97 North.

(92I/14W)

CLAIMS: PAW 2 to 6, PAW 4 Fraction, RANGER 5, 7, 30 to 33, 45 to 48, RANGER 18 Fraction.

OWNER: W. Wolodarsky.

OPERATOR: PEYTO OILS LTD., 335 Examiner Building, 805 Fifth Street SW., Calgary.

DESCRIPTION: Cache Creek Group volcanic and sedimentary rocks are intruded by ultrabasic stocks. Overburden ranges from 30 to 50 feet.

WORK DONE: Percussion drilling, four holes totalling 780 feet on Paw 4, 5 and Ranger 5, 33.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 211; Assessment Report 5238.

MAGGIE MINE (92I/NW-15) (Fig. B, No. 81)

LOCATION: Lat. 50° 55′ Long. 121° 25′ (92I/14W)
KAMLOOPS M.D. Nine miles north 27 degrees west of Cache Creek, on the west side of the highway, at approximately 1,700 feet elevation.

CLAIMS: Three hundred and forty-eight including Mineral Lease M-33R (Lots 410 to 421) plus BETH, MAG, MM, MA, MO, B, R, S, and T claims.

OWNER: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METALS: Copper, molybdenum.

WORK DONE: Topographic mapping, 1 inch equals 200 feet with 10-foot contour interval, 6.7 square miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 324; 1973, p. 212; Assessment Report 5261.

DD (Fig. B, No. 73)

LOCATION: Lat. 50° 54′ Long. 120° 08′ (92I/16E)
KAMLOOPS M.D. Extending northerly on Edwards Creek, due east of the north end of Lyons Lake.

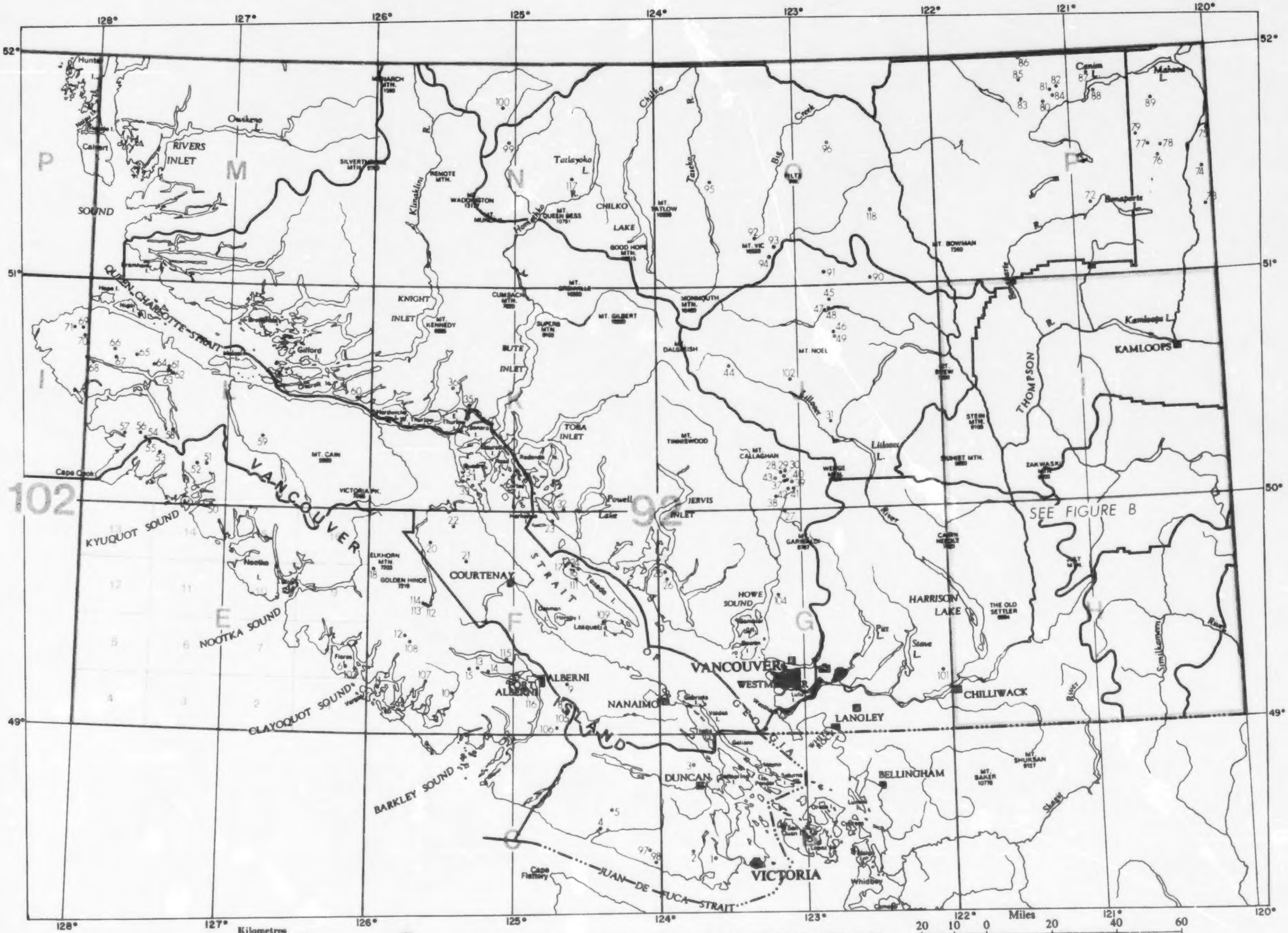
CLAIMS: DD 1 to 26.

OWNER: W. Grane.

OPERATOR: BENN EXPLORATIONS LTD., 312, 510 West Hastings Street, Vancouver.

WORK DONE: Linecutting and magnetometer survey, 23 line-miles of grid covering all claims.

REFERENCE: Assessment Report 4965.


128°
127°
126°
125°
124°
123°
122°
121°
120°
52°
51°
50°
49°
102
92
P
M
N
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P
I
L
K
J
I
H
G
F
E
C
B
RIVERS INLET
SOUND
QUEEN CHARLOTTE STRAIT
Owikeno L.
KNIGHT INLET
BUTE INLET
TOBA INLET
Tatlayoko L.
CHILKO LAKE
Chilko R.
Big Creek
Taseko R.
MT. WADDINGTON
MT. QUEEN BESS
MT. TATLOW
GOOD HOPE MTN.
MONMOUTH MTN.
MT. GILBERT
MT. DALGLEISH
MT. NOEL
MT. BOWMAN
MT. CAIN
VICTORIA PK.
ELKHORN MTN.
GOLDEN HINDE
MT. CALLAGHAN
MT. TINNISWOOD
MT. GARIBALDI
STEIN MTN.
ZAKWASKI
SEE FIGURE B
Bonaparte R.
Kamloops L.
KAMLOOPS
THOMPSON R.
Canim L.
Mahood L.
Lillooet R.
Lillooet L.
Powell Lake
JERVIS INLET
HOWE SOUND
HARRISON LAKE
THE OLD SETTLER
Pitt L.
Stave L.
Similkameen River
Skagit R.
Cape Cook
KYUQUOT SOUND
NOOTKA SOUND
CLAYOQUOT SOUND
BARKLEY SOUND
VANCOUVER ISLAND
STRAIT OF GEORGIA
COURTENAY
ALBERNI
PORT ALBERNI
NANAIMO
DUNCAN
VICTORIA
VANCOUVER
WESTMINSTER
LANGLEY
CHILLIWACK
BELLINGHAM
MT. BAKER 10778
MT. SHUKSAN 9127
Cape Flattery
JUAN DE FUCA STRAIT
Whidbey
Kilometres
50
0
50
100
Miles
20
10
0
20
40
60

Figure C INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 92 AND PART OF 102

KEY TO PROPERTIES ON INDEX MAP, FIGURE C.

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70. BEN, HUR, page 230.
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81. MATH, page 228.
82. CLIVE, page 228.
83. FLY, page 226.
84. WILL, page 228.
85. YEP, page 226.
86. WC, page 227.
87. SHERI, page 229.
88. RM, page 228.
89. NOD, SL, CS, page 229.
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91. MUGWUMP, page 221.
92. GRAB, page 222.
93. COMIN HOME, page 221.
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98. SUNRO MINE, page 164.
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SOUTHWEST BRITISH COLUMBIA
(NTS Division 92 and part of 102 Figure C)

VICTORIA 92B

JILL (92B-101) (Fig. C, No. 2)

LOCATION: Lat. 48° 29′ Long. 123° 46′ (92B/5W)
VICTORIA M.D. Two and one-half miles west of Leechtown, on the south slope of Mount Jack, between 1,800 and 2,100 feet elevation.

CLAIMS: JILL 1 to 20, 27 to 30, JILL 1 Fraction, JACK 1 to 6.

OWNER: LEECH RIVER MINES LTD., 404, 335 St. James Street, Victoria V8V 4S8.

METAL: Copper.

DESCRIPTION: Chalcopyrite, some bornite, malachite, minor pyrite, and pyrrhotite occur in basic Metchosin Group volcanic rocks peripheral to a small exposure of syenite (or monzonite) porphyry.

WORK DONE: Linecutting and magnetometer survey, 7.7 miles, 200-foot grid spacing and geochemical soil survey, 394 samples taken at 100 by 200 foot or 300-foot grid spacing covering Jill 2, 4-12, 15, 17, and Jill 1 Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 223; Assessment Report 5291.

SUSIE M (Fig. C, No. 1)

LOCATION: Lat. 48° 26.5′ Long. 123° 38′ (92B/5E)
VICTORIA M.D. Immediately east of Sooke Mountain Park, north of Ragged Mountain.

CLAIMS: SUSIE M 4 to 7.

OWNER: E. MURPHY, 5859 Sooke Road, RR 1, Sooke.

WORK DONE: 1973 and 1974 – prospecting; trenching in bedrock; about 35 feet of diamond drilling.

REFERENCE: Assessment Report 5059.

LENORA, TYEE (92B-1, 2, 87, 88, 89, 90) (Fig. C, No. 3)

LOCATION: Lat. 48° 52′ Long. 123° 47′ (92B/13W)
VICTORIA M.D. Seven miles northwest of Duncan, on Mount Sicker, at approximately 1,500 feet elevation.

CLAIMS: LENORA (Lot 35G), TYEE (Lot 36G), RICHARD III (Lot 39G), ESTELLE (Lot 53G), WESTHOLME (Lot 54G), BLUE BELL (Lot 51G), MOLINE FR. (Lot 50G), ACME (Lot 4G), TONY (Lot 18G), HELLENA (Lot 47G), WESTHOLME FR. (Lot 59G), DIXIE FR. (Lot 21G), GOLDEN ROD (Lot 44G), DONAGAN (Lot 18G), XL (Lot 19G), DONALD (Lot 63G), MURIEL FR. (Lot 108G), DOUBTFUL FR. (Lot 87G), THELMA FR. (Lot 85G), IMPERIAL FR. (Lot 86G),

(92C/8E)

HERBERT FR. (Lot 20G), PHIL FR. (Lot 110G), NT FR. (Lot 43G), MAGIC FR. (Lot 41G), KEY CITY (Lot 37G), INTERNATIONAL FR. (Lot 60G) Crown-granted claims; CF 1 to 8, 13 to 18, 25 to 31, 33, CF Fraction, DAWN 1 and 2, B 1 to 22 located claims; Mineral Leases M-13 (Lots 33G, 34G, 55G, 56G, 64G, 65G, 100G), M-17 (Lots 5G, 6G, 7G, 89G), M-18 (Lot 59G).

OWNER: Mount Sicker Mines Ltd.

OPERATOR: DRESSER INDUSTRIES, INC., 525, 404 Sixth Avenue SW., Calgary, Alta.

METALS: Copper, lead, zinc.

DESCRIPTION: Argillaceous, graphitic, chloritic, and sericitic schists are intruded by altered diorite. Pyrite was the main sulphide mineral encountered during the 1974 programme.

WORK DONE: 1973 – Mount Sicker Mines Ltd., time-domain IP survey, 5 line-miles covering CF 5, 7, 8, 16-18, Golden Rod, Moline Fr., and Mineral Lease M-17; 1974 – Dresser Industries, Inc., geochemical soil survey, approximately 300 samples taken at 100-foot grid spacing, 3 to 10 line-miles; surface diamond drilling, eight holes totalling approximately 5,500 feet on Lenora, Tyee, and Richard III; topographic mapping.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 240; Assessment Reports 4904, 5164.

CAPE FLATTERY 92C

SUNRO MINE (92C-73) (Fig. C, No. 98) By K. E. Northcote and W. C. Robinson

LOCATION: Lat. 48° 27' Long. 124° 02' (92C/8E)
VICTORIA M.D. The mine is 1 mile north of the mouth of Jordan River.

CLAIMS: Fifty Crown-granted claims and the located claims COOK 1 to 20, RED 1 to 14, SUN Fraction, GAB Fraction.

OWNER: Dison International Ltd.

OPERATOR: JORDAN RIVER MINES LTD., 701, 744 West Hastings Street, Vancouver.

METAL: Copper (production shown in Table 6).

DESCRIPTION:

The Sunro orebodies occur near contacts between Metchosin Group basalts and Sooke gabbro intrusions. These volcanic and intrusive rocks, both of Eocene age, are possibly comagmatic and coeval. Although mineralization is found both in volcanic and intrusive units, it is probably related to the emplacement and crystallization of the intrusive gabbro. Mineralization occurs in hornblendized replacements along shear zones, fractures, and crackle zones. Chalcopyrite, pyrrhotite, and pyrite are the main metallic minerals. Some molybdenite, cubanite, pentlandite, and native copper were reported by J. S. Stevenson in 1950.

The deposit was discovered by George Winkler in 1915, was explored for five years, and then was inactive from 1920 to 1949. Since that time the property has undergone fairly continuous exploration, development, and production until the most recent closure on December 3, 1974.

Total production since 1962 amounts to approximately 1,465,017 tons of ore treated. About 64,736 tons of copper concentrate was shipped, containing approximately 30,119,945 pounds of copper, 6,500 ounces of gold, and 72,433 ounces of silver. Present unconfirmed reserves are estimated to be approximately 1.5 million tons of 1.22 per cent copper after 20 per cent dilution.

The potential of the Sunro mine appears fairly promising provided there is a significant increase in the price of copper and if millsite and waste disposal problems can be solved. A comprehensive evaluation and exploration programme would be required to confirm old reserves, to locate and outline new reserves, and to test the possibility of nickel enrichment with depth.

WORK DONE:

Drifting and crosscutting, 2,576 feet; raising, 374 feet; diamond drilling, 6,829 feet.

Other work included enlargement of the underground maintenance facilities and the relaying of an outflow pipe on the seabed, to discharge tailings 3,200 feet offshore. During August development work was curtailed and production ceased on December 3.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1950, pp. 180-193; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 225.

LOSS, WOLF (92C-109, 94) (Fig. C, No. 97)

LOCATION: Lat. 48° 29′ Long. 124° 05′ (92C/8E)
VICTORIA M.D. Five miles west of Jordan River, along the south sides of Loss and Rough Creeks.

CLAIMS: LOSS 1 to 105, 138 to 140, 174, 176 to 179 (including fractions), WOLF 1 to 12.

OWNER: RIVER JORDAN SYNDICATE, c/o Glen White, 925 Beckwith Road, Richmond.

METAL: Copper.

DESCRIPTION: The claims are underlain by Metchosin Group volcanic rocks, Sooke gabbro, and related intrusive rocks.

WORK DONE: 1973 – surface diamond drillings, two holes totalling 556 feet on Loss 88 and Wolf 8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 225.

VAL (92C-88) (Fig. C, No. 4) G.E.P. Eastwood

LOCATION: Lat. 48° 35′ Long. 124° 23′ (92C/9W)
VICTORIA M.D. Two miles northeast of Port Renfrew, at the head of Port San Juan Inlet, between 100 and 900 feet elevation.

(92C/9W)

CLAIMS: VAL 1 to 14, SUE 1 to 6, 11 to 13, CATY 2 to 8, 12, 14, 16, 18, 20, 22, 24, ED 6.

OWNER: PERBELL MINES LTD., 1700, 777 Hornby Street, Vancouver.

METAL: Copper.

DESCRIPTION:

The claims are situated along the north side of the San Juan River between Gordon River and Fairy Creek. The main road to Shawnigan Lake follows the north side of the San Juan River valley. Additional access is provided by the Brown Creek road and a branch (designated BR 1000) off it along a bench in the south-facing hillside.

Five overgrown adits and a water-filled shaft indicate previous exploration, possibly prior to 1900. Work on the current claims has consisted of a magnetometer survey in 1971, prospecting and a soil geochemical survey in 1973, and geological mapping by J. McGoran early in 1974. The writer made reconnaissances along the Brown Creek road and BR 1000 in May.

Above the bench and westward from the Brown Creek road the claims are underlain by diorite. Toward the head of Brown Creek, north of the claims, this diorite grades to paragneisses. The remainder of the claims area is underlain by thin-bedded rocks resembling those of the Leech River Formation. McGoran identified principally chert, argillite, and tuff. Where BR 1000 formerly crossed the principal creek between Brown and Fairy Creeks a band of thin-bedded brown chert, about 8 metres thick, strikes west-northwest and exhibits minor folding and faulting. These chert exposures are north of the bench and therefore north of the probable location of the San Juan fault postulated by Muller (*Geol. Surv., Canada,* Paper 74-1, Pt. A, p. 21).

The thin-bedded rocks are cut by numerous quartz veins. Many veins carry minor pyrite, and some also contain traces of pyrrhotite and chalcopyrite, as seen in an adit with a sand-filled winze on Val 2 near the bridge. Sporadic disseminations and knots of pyrite occur in the argillite.

WORK DONE: 1973 – prospecting covering all claims; 1974 – surface geological mapping, 1 inch equals 1,320 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 226; Assessment Reports 4940, 4941; Muller, J. E., *Geol. Surv., Canada,* Paper 74-1, Pt. A.

REKO (92C-90, 91, 110) (Fig. C, No. 5)

By G.E.P. Eastwood

LOCATION: Lat. 48° 39' Long. 124° 18' (92C/9W)
VICTORIA M.D. Eight miles northeast of Port Renfrew, 7 miles northeast of Port San Juan Inlet, at between 1,200 and 1,800 feet elevation.

CLAIMS: REKO 1 to 66, KESTREL 1 to 15.

OWNER: REAKO EXPLORATIONS LTD., 501, 409 Granville Street, Vancouver.

METALS: Iron, copper.

DESCRIPTION:

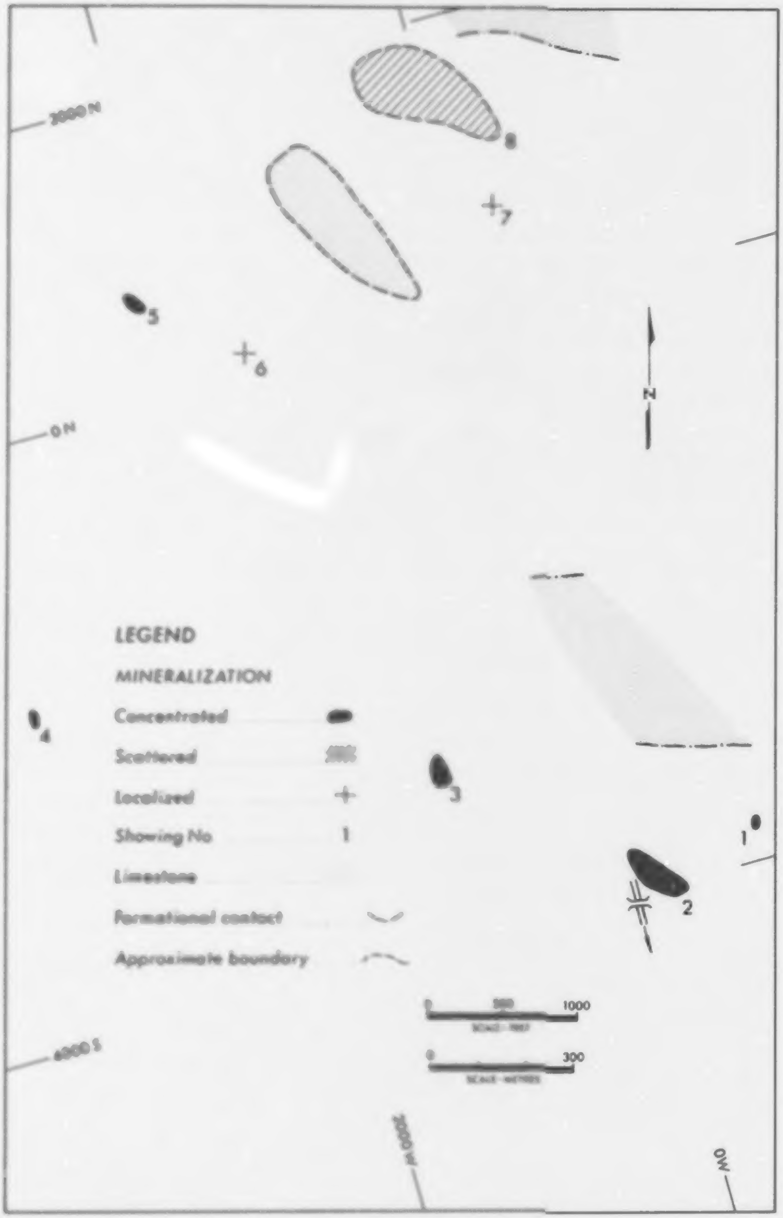
The claims cover the headwaters of Renfrew (Granite) Creek, and the mineral showings occur in the creek valley at elevations ranging from 1,200 to 1,800 feet. Access is provided by Granite Main Line and several branch logging roads. The creek is crossed by a bridge at 1,200 feet elevation.

In 1970 a British Columbia Forest Products crew excavated road ballast from a pit at the southeast end of area 8 of this report and exposed magnetite and sulphides. Martial H. Levasseur located covering claims in 1970, expanded the holdings in 1971-1973, and transferred the claims to Reako Explorations Ltd. An extensive magnetometer survey in 1972 was followed by diamond drilling in 1972 and 1973. Robert L. Roscoe was retained as consulting geologist.

The writer visited the property in May 1974, and was guided to the showings by Mr. Roscoe. Some geological mapping was done on the showings and along logging roads late in May. A copy of Roscoe's 1973 report to the company was made available, and in October representative sections of mineralized drill core were examined in Vancouver.

The geology is partly illustrated on Figure 21. The predominant rock is an intrusive breccia. The primary fragments are fine grained and dark greyish green in colour, resembling andesite. Some of the fragments contain amygdules. This andesitic rock was successively intruded by mafic-rich and mafic-poor diorite. The breccia grades to massive diorite southwest of a line through showings 3 and 5. At least four patches of white to light grey crystalline limestone occur in the area, and an extensive body of similar limestone adjoins the intrusive breccia on the northeast. The limestone north of showings 1 and 2 has been mapped only along two logging roads, but can be seen to extend up the logged-off hillside where it appears to overlie the intrusive breccia. The south contact is well exposed on Granite Main Line, where fingers and tongues of leucodiorite penetrating the andesitic rock terminate abruptly against the limestone. However, this contact is marked by a rind of massive garnetite 8 inches thick, and farther north the limestone is intruded by andesite dykes which are in part altered to skarn and intruded by dykes of leucodiorite. A similar pattern of intrusion occurs in the large area of limestone in the north. The limestone was clearly present when the diorite was intruded, but it appears to have been generally impenetrable. The limestone patch west of showing 7 has been mapped only along a logging road, and its contact relations and full extent are not known. An abrupt termination at the northwest end may mark a fault. Small outcrops of limestone occur east and west of showing 6, but they are separated by diorite; possibly the limestone is involved in the complex here. A body of limestone is indicated by drilling in the area of showing 1.

The structural geology is not understood. Bedding is rarely apparent in limestone, but in a few places thin sandy beds are discernible on weathered surfaces. North of showing 1 the limestone contains a layer of andesite chips. Nearby, close to the south contact, a small northwest-plunging dragfold is outlined by sandy beds and indicates the limestone overlies the complex. This body of limestone thus appears to occupy a synclinal structure plunging northwest. However, it does not appear in road cuts west of Renfrew Creek. The south contact of the north body of limestone dips 80 degrees south, but no other structural information was obtained from this area. No faults have been identified. A set of long, narrow, fine-grained grey dykes strike consistently 020 degrees, transect all other rocks, and probably follow late fractures.



2000 N
8
7
5
6
N
0 N
LEGEND
MINERALIZATION
Concentrated
Scattered
Localized
Showing No 1
Limestone
Formational contact
Approximate boundary
4
3
1
2
0 500 1000
SCALE - FEET
0 300
SCALE - METRES
4000 S
2000 W
0 W

Figure 21. Reko showings on upper Renfrew Creek, Vancouver Island, Reako Explorations Ltd.

The age of the rocks is unknown. Fossils have not been found in the limestone, and metamorphism has probably destroyed any that may have been present. Lithologically the limestone closely resembles Quatsino limestones and the andesitic rock resembles rocks characteristic of the Karmutsen Formation. The intrusive breccia may represent a gently dipping roof zone of a batholith or large stock. The apparent large size of the intrusion would suggest correlation with the Island Intrusions.

Eight mineralized zones are shown on Figure 21. Most are skarn zones in intrusive breccia, but No. 4 consists of massive magnetite with minor garnet in diorite. Individual descriptions follow:

1. The South Pit A Zone is exposed for a length of 40 feet and a width of 15 feet in a road ditch. Drilling to date indicates that it is not much larger than the surface exposure. As exposed it consists of 35 per cent magnetite, 35 per cent garnet, and 30 per cent pyrrhotite. Chalcopyrite occurs as small blebs, minute veinlets, and fine disseminations in this skarn. Core from vertical hole No. 10 was logged by the writer. From 15 to 53 feet the rock is limestone, with short sections of skarn which are probably altered andesite dykes. Almost massive magnetite occurs from 17 to 20 feet and from 38 to 42 feet, containing minor disseminated chalcopyrite in the first interval. Some magnetite occurs in skarn from 46 to 48 feet.
2. The South Pit B Zone originally showed only a few outcrops of garnetite and silicified rock. It produced a strong magnetic anomaly and was systematically drilled. A trench was then bulldozed 250 feet northeast of the bridge, exposing magnetite in garnetite. The outline shown is derived from Roscoe's drill logs. Core from two vertical holes was logged by the writer. No. 19 is from near the centre of the zone and shows magnetite thinly to fairly thickly disseminated in epidote - pyroxene - garnet skarn from 8 to 67 feet and sporadically from 67 to 83 feet, with some sporadic chalcopyrite. No. 20 is from the northwest part of the zone and shows considerable veining of epidote-pyroxene skarn by magnetite, with local pyrite and chalcopyrite, from 7 to 12 feet. Patches of magnetite occur in massive andesite from 14 to 20 feet.
3. The South Pit C Zone is not exposed and is known only from the drilling of a magnetic anomaly. The outline shown is derived from Roscoe's drill logs. The writer logged core from hole No. 9, which is inclined at 45 degrees to the west through the centre of the zone. From 62 to 78 feet skarn is more or less mineralized with magnetite, pyrrhotite, and pyrite, both disseminated and as veins or veinlets. Below 80 feet the rock is predominantly diorite.
4. The Martin's Pit Zone is displayed on a bluff face and has the appearance of a thin wedge plastered onto the diorite. The company reports, however, that drilling into the base of the exposure in 1974 showed substantial lengths of magnetite, indicating that the magnetite extends back under the diorite. The length shown is the length of outcrop; the width is exaggerated from the 20 feet exposed. The showing consists of irregular veins, pockets, and masses of magnetite in partly skarned diorite. Sulphide minerals have not been found.
5. The Northwest Zone is partly exposed in bulldozer strippings and one small outcrop. The outline shown is derived from Roscoe's drill logs. As exposed it consists of a mixture of magnetite and sulphide minerals in skarn. The writer logged

core from hole No. 7, which is inclined at 45 degrees to the west near the north end of the zone. Abundant magnetite occurs with more or less chalcopyrite, pyrrhotite, and pyrite from 2 to 26 feet, interrupted by a 5-foot diorite dyke. From 67 to 87 feet the core is mostly massive pyrrhotite, containing lenses and blebs of chalcopyrite. Lenses and megacrysts of pyrite are commonly rimmed by chalcopyrite. Magnetite is very minor in this section.

6. The Falls showing forms a natural weir across a small tributary of Renfrew Creek. A mixture of magnetite and skarn is exposed over an area of 20 square feet and a height of 12 feet. It is flanked by diorite and andesite, but the nearby area is covered by overburden. No work has been done on this showing.
7. No. 7 showing consists of two small exposures of massive pyrrhotite containing networks of chalcopyrite. It has been cut by two 15-foot packsack diamond-drill holes. Its extent and relations to enclosing rocks are unknown.
8. The North Pit Zone consists of numerous small exposures of magnetite and skarn on two knolls and in a small quarry. Drilling appears to confirm that the mineralization is sporadic, and has not been extended far enough to delimit the zone. The writer logged core from vertical hole No. 16, which is toward the southwest side of the zone outlined. Massive and near-massive magnetite from 9 to 32 feet is interrupted by 8 feet of very weakly mineralized skarn. Pyrite is minor and chalcopyrite was not seen.

Roscoe has estimated the following tonnages from the drilling results, without specifying grades:

Zone 1	45,250 tons
Zone 2	1,070,000 tons
Zone 3	35,100 tons
Zone 8	36,450 tons
Zone 5	38,250 tons
Total	1,225,050 tons

WORK DONE: Surface diamond drilling, 1973 – 10 holes totalling 2,455 feet on Reko 38; 1974 – six holes totalling 293 feet on Reko 37.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 226; Assessment Report 5029.

NOOTKA 92E

ORMOND, IRON KING (92E-21, 22, 33, 34) (Fig. C, No. 103)

LOCATION: Lat. 49° 17.5′ Long. 126° 05′ (92E/8E)
ALBERNI M.D. At Matilda Bay, on Flores Island, in the Clayoquot District, between sea-level and 1,150 feet elevation.

CLAIMS: CONTACT, CONTACT 1 to 4, FLORES 1 to 11.

OWNER: L. Hansen.

OPERATOR: ROSS ISLAND MINING CO. LTD., 14, 1030 West Georgia Street, Vancouver.

(92E/8E)

METALS: Copper, silver, gold.
DESRIPTION: Skarn is reported to contain sulphide minerals and lenses of magnetite.
WORK DONE: Drilling totalling 557 feet on Contact.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 262.

FLO (92E-49) (Fig. C, No. 6)

LOCATION: Lat. 49° 19' Long. 126° 8.5' (92E/8E)
ALBERNI M.D. On Flores Island, 0.75 mile east of Mount Flores.
CLAIMS: FLO 1, 2, 7 to 9.
OWNER: WESFROB MINES LIMITED, 1112 West Pender Street, Vancouver.
METAL: Copper.
DESCRIPTION: The claims are underlain by quartz monzonite and granodiorite showing varying degrees of alteration to sericite, chlorite, kaolinite, and montmorillonite (?). Outcrops of quartz feldspar porphyry probably represent dykes. Pyrite and chalcopyrite occur in quartz monzonite on Flo 7 as narrow, discontinuous fracture fillings and localized fine disseminations.
WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims.
REFERENCES: Assessment Reports 2317, 4356, 4956.

BEANO, FRIEND (92E-2, 3) (Fig. C, No. 7)

LOCATION: Lat. 49° 59.9' Long. 126° 49' (92E/15W; 92L/2W)
ALBERNI M.D. Approximately 3 miles northeast of Zeballos.
CLAIMS: ZEB, BANKO, totalling approximately 20.
OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.
METALS: Gold, copper.
DESCRIPTION: The claims are underlain by andesitic and dacitic Bonanza tuffs with intercalated bands and scattered pods of limestone. The Bonanza rocks have been intruded by diorite and gabbro and by narrow dykes of andesite, felsite, and feldspar porphyry. In places the limestone has been partly replaced by actinolite which contains veins, pods, and disseminations of gold-bearing pyrrhotite, pyrite, and lesser amounts of chalcopyrite. There are also a number of quartz veins in tuff carrying pyrite, arsenopyrite, and locally free gold.
WORK DONE: Surface geological mapping at scales from 1 inch equals 400 feet to 1 inch equals 50 feet; geochemical soil and rock survey, 434 samples taken along reconnaissance lines and on grids at various intervals covering Banko 1-4, 9-12, and Zeb 1-8.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, Bull. 27; Assessment Report 5079.

WWW (92F-141) (Fig. C, No. 106)

LOCATION: Lat. 49° 02′ Long. 124° 41′ (92F/2E)
ALBERNI M.D. Fourteen and one-half miles south-southeast of Port Alberni, covering the headwaters of Corrigan Creek, between 1,400 and 2,400 feet elevation.

CLAIMS: ANGLO 1 to 15, Mineral Lease M-55 which comprises WWW 1 to 4 (Lots 37 to 39, 53).

OWNER: CORRIGAN CREEK GOLD MINES LTD., Box 370, Port Alberni.

DESCRIPTION: A complex of igneous rocks is exposed in various workings on the property. Tongues of granodiorite alternate with masses of hybrid diorite and both types have been cut by basic dykes. Three quartz veins occur in fissures and contain pockets of pyrite, galena, and sphalerite. The upper two veins strike southwesterly and have moderate southeast dips while the lower vein is relatively flat.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet and underground geological mapping, 1 inch equals 100 feet covering Lots 53 and 39; geophysical work, approximately 5 line-miles covering Lots 39, 53 and Anglo 5, 6; claims, topography, and surface workings surveyed; road construction, approximately 2 miles on Lots 39, 53 and Anglo 5, 6; trenching, approximately 500 feet and stripping, 100 by 200 feet on Lots 39, 53; underground work, 10 feet on No. 3 adit and approximately 40 feet on No. 4 adit.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1935, pp. F49-F52; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 289.

STORM (92F-82) (Fig. C, No. 105)

LOCATION: Lat. 49° 08′ Long. 124° 36′ (92F/2E)
ALBERNI M.D. Eleven miles southeast of Port Alberni, on the north slope of Mount McQuillan, between McQuillan and China Creeks, at approximately 4,000 feet elevation.

CLAIMS: SOL 1 to 40.

OWNER: Coast Copper Company, Limited.

OPERATOR: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Copper, molybdenum, gold, silver.

DESCRIPTION: Mapping covered the ridge extending north from Mount McQuillan. Sicker Group andesites on the east side of the ridge were seen to be dioritized on the west side. Small bodies of diorite were exposed along the ridge crest, and a larger mass extends one-half mile north from Mount McQuillan along the crest and west slope. These rocks are in turn intruded by a stock and dykes of acidic quartz feldspar porphyry. Abundant pyrite and pyrrhotite occur in three zones, accompanied by minor chalcopyrite and locally by minor molybdenite or sphalerite. The sulphide minerals occur in quartz veins or veinlets in andesite or dioritized andesite and are disseminated in porphyry dykes.

(92F/2E)

WORK DONE: Trenching, approximately 600 feet covering Sol 10, 12, 14, and 31; surface geological mapping, 1 inch equals 400 feet; linecutting, 12 miles of grid; geochemical soil survey, 300 samples, approximately 12 line-miles, 200 by 400-foot grid spacing covering all claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1936, p. F30; 1944, p. 153; Assessment Report 5354.

ALBERNI (92F-79) (Fig. C, No. 8)

LOCATION: Lat. 49° 10' Long. 124° 40' (92F/2E)
ALBERNI M.D. Nine miles east of Port Alberni, on Mineral Creek, between 2,000 and 3,000 feet elevation.

CLAIMS: SAM 1 to 16.

OWNER: KEYWEST RESOURCES LTD., Ste. 5, 1387 West 70th Avenue, Vancouver V6P 2Z1.

METALS: Gold, silver.

DESCRIPTION: Veins striking north 40 degrees east and dipping 40 to 47 degrees southeast occur in a shear zone in Sicker Group volcanic rocks.

WORK DONE: Mapping of adits and veins; prospecting of all claims; layout for road covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 230; Assessment Report 4915.

A (92F-360, 361) (Fig. C, No. 116)

By G.E.P. Eastwood

LOCATION: Lat. 49° 13' Long. 124° 54' (92F/2W)
ALBERNI M.D. At the heads of tributaries of Cous Creek, south of Sproat Lake.

CLAIMS: A 8 to 8.

OWNER: LAWRENCE VEZINA, 1077 Goldstream Avenue, Victoria.

METAL: Copper.

DESCRIPTION:

The showings occur in a broad saddle at the heads of two tributaries of Sous Creek, 3 miles south of the mouth of Fosseli Creek. A contact between Quatsino limestone and Karmutsen amygdaloidal andesite or basalt trends northwest through the property. The limestone is intruded by irregular bodies of andesite, which in at least two places have been altered to garnet-epidote skarn.

The No. 1 showing comprises a small body of andesite which is irregularly altered to skarn and irregularly mineralized with chalcopyrite, less bornite, and superficial malachite and azurite. When the property was visited in June the area of rock exposed was 1,200 square feet, of which at most 20 per cent was mineralized. Barren limestone is exposed a short distance to the northwest and southwest.

In the No. 2 showing the same copper minerals occur in both skarn and limestone near their mutual contact. The irregular, branching shape of the intrusion has resulted in irregular, pockety mineralization. While specimens of very good grade may be obtained, any practical volume outlined would include much barren rock The mineralized area exposed was 50 square feet, but this was open to the west and south.

(92F/2W)

Rusty altered zones were observed in the amygdaloidal rock in an area north of No. 2 showing. The principal sulphide is pyrite, but some chalcopyrite is present. The owner subsequently reported that one of these zones had been blasted, with encouraging results, and that several more sulphide occurrences had been found along the west side of the ridge to the southeast.

WORK DONE: Hand and machine trenching; blasting.

AMY (Fig. C, No. 9)

LOCATION: Lat. 49° 14' Long. 124° 38' (92F/2E)
ALBERNI M.D. Eight miles southeast of Port Alberni, covering the headwaters of Rogers and Rifle Creeks, at approximately 1,800 feet elevation.
CLAIMS: AMY 1 to 12.
OWNER: WESTERN MINES LIMITED, Exploration Office, Box 8000, Campbell River.
DESCRIPTION: The claims are underlain by a 3,500-foot succession of mainly pyroclastic volcanic rocks and some flows. The rocks are mainly rhyolite to dacite composition with some andesite.
WORK DONE: 1973 and 1974 – surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 165 samples taken at 200 by 400-foot grid spacing covering all claims.
REFERENCE: Assessment Report 4875.

BLACK BEAR, CINNAMON BEAR (92F-44, 45) (Fig. C, 10)

LOCATION: Lat. 49° 10.5' Long. 125° 24.5' (92F/3W)
ALBERNI M.D. Three and one-half miles north-northeast of Kennedy Lake, on the west side of Kennedy River.
CLAIMS: BLACK BEAR (Lot 293), CINNAMON BEAR (Lot 294), GRIZZLY BEAR (Lot 300), IRONSIDE (Lot 487).
OWNER: GEORGE E. KINNEARD, 8, 94 Commercial Street, Nanaimo.
DESCRIPTION: Karmutsen basalt contains a few small quartz veins and pyritic zones. A contact with granitic rocks is exposed to the south.
WORK DONE: Prospecting traverse across Black Bear and along boundary with Cinnamon Bear.
REFERENCE: Assessment Report 5112.

FOREMOST (92F-9, 10, 22, 24) (Fig. C, No. 107)

LOCATION: Lat. 49° 14' Long. 125° 35' (92F/4E)
ALBERNI M.D. At the head of Deer Bay, on Tofino Inlet, on Marble, Onad, and Tofino Creeks, between 100 and 450 feet elevation. The Nickel claims are 1.5 miles southwest, on the west side of Deer Bay.
CLAIMS: NICKEL 1 and 2, FOREMOST COPPER 1 to 4, COPPER CREEK 1 to 4, CLEAR CREEK 1 to 4.

(92F/4W)

OWNER: Lorne Hansen.

OPERATOR: SUN-WEST MINERALS, LIMITED, Ahousat.

METALS: Copper, nickel, gold, silver, molybdenum, iron.

DESCRIPTION: Copper and molybdenum occur as replacements and in fractures in quartz diorite.

WORK DONE: Surface geological mapping covering Foremost 1-4, Clear Creek 1-4, and Copper Creek 1-4; stripping, 60 by 200 feet covering Foremost 1 and Copper Creek 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 230.

IRON CAP (92F-158) (Fig. C, No. 11)

LOCATION: Lat. 49° 13' Long. 125° 54' (92F/4W)
ALBERNI M.D. Four air miles north of Tofino, around Lone Cone Mountain, extending to the northeast, between sea-level to 2,366 feet elevation.

CLAIMS: BL 1 to 24, 90 to 98, LONE CONE 1 to 39, 42 to 44, 52 to 66, LIT 1 to 3, NICKEL 1 to 6, WIN 1 to 6.

OWNER: Lindale Copper Mines Ltd.

OPERATOR: TEXADA MINES LTD. and KAISER EXPLORATION AND MINING COMPANY, Box 10, Gillies Bay V0N 1W0.

METALS: Copper, nickel.

DESCRIPTION: Andesite and hornblende gneiss are successively intruded by gabbro and quartz diorite stocks. Mineralization is fracture controlled and disseminated, consisting of chalcopyrite, pyrrhotite, and pentlandite in gabbro and chalcopyrite and molybdenite in andesite, hornblende gneiss, and quartz diorite.

WORK DONE: Trenching, 350 feet covering WIN 1, 3, BL 1, 3, 4-7, 9, 10, and Lone Cone 8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 231.

MUSKETEER, BUCCANEER (92F-59 to 61) Fig. C, No. 108)

By W. C. Robinson

LOCATION: Lat. 49° 26' Long. 125° 42' (92F/5E)
ALBERNI M.D. Forty-two miles west-northwest of Port Alberni, on the south side of Bedwell River, between Blaney and Sam Craig Creeks.

CLAIMS: MAY 1 to 8, JUNE 1 to 6, DEL 1 to 3, and Mineral Lease M-61 comprising MUSKETEER 1 to 4, SHAMROCK 1 and 2, B FR. (Lots 1921 to 1926, 1928).

OWNER: Hummingbird Mines Ltd.

OPERATOR: NEW MUSKETEER GOLD MINES LTD., 846 West Hastings Street, Vancouver.

METALS: Gold, silver, lead, zinc (production shown in Table 6).

DESCRIPTION: Sulphide mineralization containing gold as free grains occurs in veins in quartz diorite. The sulphides consist of pyrite, sphalerite, galena, and chalcopyrite.

WORK DONE: During 1974 a camp, consisting of four trailers, was established at the mine site. Other work included 1,000 feet of road construction and rehabilitation of the mine. Work ceased in August when the entire camp was destroyed by fire.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1940, p. 73; 1941, pp. 70, 71; 1942, p. 66; *B.C. Dept. of Mines & Pet. Res.,* Bull. 13; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 232.

NOBLE (92F-57) (Fig. C, No. 12)

LOCATION: Lat. 49° 26′ Long. 125° 44′ (92F/5E)
ALBERNI M.D. Fifteen and one-half miles upstream from Bedwell Sound, on Bedwell River.

CLAIMS: CUB 1 to 12, NUB 1, 2.

OWNER: GOLDEN HINDE MINES LTD., Box 94, Tofino.

METAL: Copper.

DESCRIPTION: The area prospected is largely underlain by quartz diorite. Volcanic rock occurs to the west and as inclusions in quartz diorite. Pyrrhotite is widespread in the quartz diorite as streaks and patches of massive to disseminated sulphide, and is accompanied by some chalcopyrite.

WORK DONE: 1973 – prospecting of an area equivalent to 4.5 claims covering Cub 1-7 and Nub 1, 2; 1974 – prospecting of an area equivalent to one-half a claim covering Cub 3 and 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 232; *B.C. Dept. of Mines & Pet. Res.,* Bull. 7; Assessment Reports 4951, 4962.

MORNING (92F-119) (Fig. C, No. 13)

LOCATION: Lat. 49° 18′ Long. 125° 16′ (92F/6W)
ALBERNI M.D. Three miles west of Sproat Lake, 1,000 feet north of Highway 4, between 600 to 900 feet elevation.

CLAIMS: AJ 1 to 15, MIKE 1 to 7, 9 to 15, MIKE 8 Fraction, JIM 1 to 6, Mineral Lease M-6 comprising MORNING (Lot 975), MORNING 1, 2 (Lots 976, 977), APEX (Lot 978), APEX FR. (Lot 979), APEX NO. 3 FR. (Lot 980).

OWNER: Lou-Mex Mines Limited.

OPERATOR: HIGHLAND MERCURY MINES LIMITED, 1400, 1199 West Hastings Street, Vancouver.

METALS: Gold, minor copper.

DESCRIPTION: Parallel quartz veins containing pyrite, gold, and chalcopyrite follow steep northeast-striking fissures in sheared Karmutsen basalt.

WORK DONE: Surface workings surveyed; surface diamond drilling, two holes totalling 1,396 feet on Morning 1 (Lot 976); tellurometer survey of diamond-drill holes and trenches covering Morning (Lot 975) and Morning 1 (Lot 976).

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1934, p. F4; 1963, p. 121.

TRI (92F-281) (Fig. C, No. 15)

LOCATION: Lat. 49° 19′ Long. 125° 21′ (92F/6W)
ALBERNI M.D. Six and one-half miles west of Sproat Lake, on the south side of Taylor River.
CLAIMS: KETA 1 to 10.
OWNER: WALTER GUPPY, Box 94, Tofino.
METAL: Copper.
DESCRIPTION: Four copper showings occur at contacts between granodiorite and limestone or volcanic rocks. The skarn is predominantly actinolite with minor garnet and contains varied amounts of pyrite, chalcopyrite, and bornite.
WORK DONE: Prospecting on Keta 1 to 8 in 1973.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 248; Assessment Report 4926.

HERB (92F-362) (Fig. C, No. 14)

LOCATION: Lat. 49° 17′ Long. 125° 11′ (92F/6E)
ALBERNI M.D. On the north side of Sproat Lake, 3.25 miles from its western end.
CLAIMS: HERB, MOON, RH, totalling approximately 42.
OWNER: RICH HILL MINES LTD., 210, 890 West Pender Street, Vancouver.
METAL: Gold, silver, copper.
DESCRIPTION: Andesite flows and breccias contain some pyrite, chalcopyrite, bornite, and native copper mineralization.
WORK DONE: Surface diamond drilling, six BQ holes totalling 667 feet on Herb 2-4.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 268; Assessment Report 4982.

CENTENNIAL, ROSEANNE (92F-293) (Fig. C, No. 115)

By G.E.P. Eastwood

LOCATION: Lat. 49° 21′ Long. 125° 02′ (92F/6E)
ALBERNI M.D. Twelve miles northwest of Port Alberni, on the north side of Great Central Lake.
CLAIMS: DELORES 1 to 4, CHALCO PRINCE 1 and 2, GEAN 2, TM 1 to 3.
OPERATOR: A. P. BOULANGER, 1563 Discovery Avenue, Nanaimo; A. COLLIER, 2025 Bowen Road, Nanaimo; F. MURPHY, Brannan Lake Secondary School, Box 1000, Nanaimo.
METAL: Copper.
DESCRIPTION:

The Centennial showing is on the northwest slope of Little Thunder Mountain (Fig. 22), on Delores 1 claim, which is a relocation of Centennial 4. The host rock is massive porphyritic andesite or basalt of the Karmutsen Formation. On the northeast side of a small gully a shear zone striking 070 degrees and dipping 53 degrees south forms the hangingwall of a small zone of shearing, alteration, and mineralization. The footwall is covered, and the exposed thickness is 10 feet. The zone is 20 feet long, terminating abruptly at both ends. Within the zone the rock is silicified and abundantly mineralized with chalcopyrite and pyrrhotite, both partly weathered to limonite. A grab sample assayed: gold, trace; silver, trace; copper, 8.28 per cent.

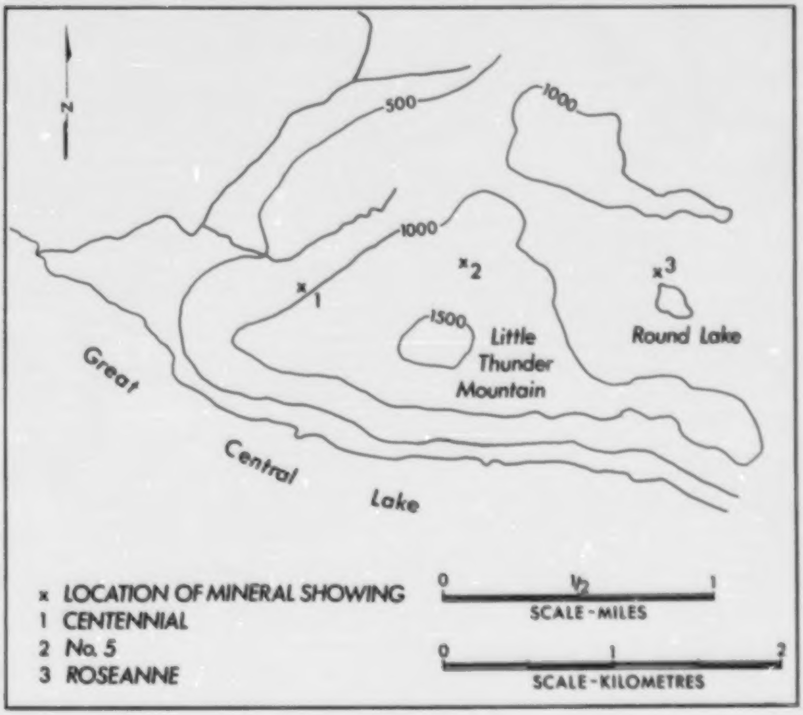

N
500
1000
1000
1500
1
2
3
Little Thunder Mountain
Round Lake
Great Central Lake
x LOCATION OF MINERAL SHOWING
1 CENTENNIAL
2 No. 5
3 ROSEANNE
0
½
1
SCALE-MILES
0
1
2
SCALE-KILOMETRES

Figure 22. Showings on Little Thunder Mountain, Great Central Lake, Vancouver Island.

The No. 5 showing is exposed in a road cut along the east side of the north ridge of Little Thunder Mountain. The Karmutsen host rock is cut by a 5-inch calcite vein containing minor chalcopyrite and bornite. An 18-inch felsic dyke 3 feet northeast of the vein contains sparsely disseminated chalcopyrite. For about 5 feet on either side of the vein the volcanic rock is intensely epidotized and contains a few specks of sulphide.

The Roseanne showing is exposed in a road cut north of Round Lake, and was formerly covered by the Roseanne 1 and 2 claims. Karmutsen andesite or basalt has been intensely altered to garnet-epidote skarn, which has been injected by short veins and pockets of quartz. Blebs and disseminations of chalcopyrite occur in and near the quartz. A prominent fracture, striking 055 degrees and dipping vertically to 85 degrees northwest, may have controlled the alteration and mineralization. About 40 feet down the road from the showing a lensy limestone bed ranging up to 4 inches thick has an overall attitude of 125 degrees 60 degrees southwest.

(92F/9W)

WORK DONE: Hand trenching.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 76; 1968, p. 104.

JUNEAU (92F-133) (Fig. C, No. 109)

LOCATION: Lat. 49° 31′ Long. 124° 22′ (92F/9W)
NANAIMO M.D. Covering the northwest end of Lasqueti Island, between Scottie, Spring, and False Bays, near sea level.

CLAIMS: TOM 1 to 32.

OWNER: AMBER RESOURCES LIMITED, 2nd Floor, 890 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Copper mineralization occurs in altered amygdaloidal volcanic rocks near a contact with quartz diorite.

WORK DONE: 1973 – reconnaissance electromagnetic survey over copper zone, 20 samples taken; surface diamond drilling, four holes totalling 431 feet on Tom 2.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1926, pp. 312 (map), 319; 1930, p. 308; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 214 (Venus, St. Joseph); 1971, p. 248.

PAUL, DAVIE BAY (92F-104, 287) (Fig. C, No. 110)

LOCATION: Lat. 49° 38′ Long. 124° 24′ (92F/9W)
Report on this property in Chapter 4, Limestone.

TEXADA MINE (92F-106, 107, 257-259) (Fig. C, No. 111)

By J. W. Robinson

LOCATION: Lat. 49° 42′ Long. 124° 32′ (92F/10E)
NANAIMO M.D. Three and one-half miles south of Vananda, at Welcome Bay on the southwest coast of Texada Island.

CLAIMS: EASTGATE (Lot 53), GOODALL (Lot 234), LEROI, BOULDER NEST, JACK NORTH, YELLOW KID, LMC (Lots 264 to 268), CAMERON (Lot 182) plus approximately 55 claims including LIME, IRON, and TML.

OWNER: TEXADA MINES LTD., Box 10, Gillies Bay.

METALS: Iron, copper (production shown on Table 6).

DESCRIPTION:

The Lake and Paxton orebodies contain magnetite with minor amounts of chalcopyrite and pyrrhotite. These orebodies replace limestone, basalt, and minor amounts of quartz diorite at the troughs of tight overturned synclines. The synclines are sharply overturned toward the northeast and plunge gently westward.

The western orebodies (Prescott, Midway, and Yellow Kid), with similar mineralization, form an upward branching system following the contact zone between the Gillies granodiorite to quartz diorite stock and the Texada volcanic rocks. The presence of irregular porphyry bodies and breccia zones appears to have had an important influence on ore deposition.

WORK DONE:

During 1974, trackless mining methods were used to drive 1,451 feet of drift. Standard Jackleg mining was used to drive 136 feet of subdrifting. The Alimak raise machine was used to drive 77 feet of raise. Conventional methods were used to drive 355 feet of raise and 199 feet of drop raise was driven. The drop raises were generally 40 to 60 feet in length and were drilled from the top by a longhole drill. No underground diamond drilling was done during the year. Surface diamond drilling recovering AX core amounted to 4,504 feet.

An average of 58 men was employed working underground and 122 men were employed working on surface. The major portion of the ore was mined by longhole stoping. A small tonnage of ore was mined from one open pit during the latter part of the year.

The mine produced 925,859 tons of ore. In the mill, magnetic separation and selective flotation were used to produce 355,337 tons of iron concentrate and 7,584 tons of copper concentrate. A unique feature is that the mill water is salt water drawn from the Pacific Ocean.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1964, pp. 146-151; 1966, p. 72; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 282; 1971, p. 251; 1972, p. 269; 1973, p. 233.

COPPER QUEEN, CORNELL (92F-105, 112, 271) (Fig. C, No. 16)

LOCATION: Lat. 49° 45′ Long. 124° 32′ (92F/10E, 15E)
NANAIMO M.D. The claims surround Emily Lake on Texada Island, between sea-level and 800 feet elevation.

CLAIMS: COPPER QUEEN (Lot 40), CORNELL (Lot 201), McLEOD 1, 3 to 8 (Lots 521, 515 to 517, 518B, 519B, 520), McLEOD 2 FR. (Lot 522), LAP 5 and 6 (Lots 527 and 528), LAP 1 FR. to 4 FR. and 8 FR. (Lots 522, 523, 524B, 525, 526, 530B), plus IC 1 to 4, 11 to 16.

OWNER: IDEAL CEMENT COMPANY (division of Ideal Basic Industries, Inc.), Rock Products Division, 610, 1200 West Pender Street, Vancouver V6E 2S9.

METAL: Copper.

DESCRIPTION: The claims are underlain by Quatsino limestone which is intruded by andesite and diorite dykes.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet; linecutting and magnetometer survey, 2.9 miles; geochemical silt and soil survey, approximately 150 samples covering Copper Queen, Cornell, and McLeod 1, 3, 5.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1913, p. 288; 1925, p. 284; Assessment Report 5077.

PRICE (92F-73) (Fig. C, No. 112)

By W. C. Robinson

LOCATION: Lat. 49° 33' Long. 125° 34' (92F/12E)
ALBERNI M.D. One-half mile southwest of the south end of Buttle Lake.

CLAIMS: BOULDER, RAVEN, BETTY, BARITE (Lots 1971 to 1974), and approximately 45 HAT and W claims.

OWNER: WESTERN MINES LIMITED, 1103, Three Bentall Centre, 595 Burrard Street, Vancouver.

METALS: Copper, zinc, lead, silver, gold.

DESCRIPTION: Massive sulphide mineralization occurs in altered and siliceous Sicker volcanic rocks.

WORK DONE: During 1974 work continued on the driving of a tunnel from the west slope of Thelwood Creek valley to connect, on December 13, with a heading from the No. 13 level of the Myra mine. Total drifting and crosscutting, 2,700 feet; diamond drilling, 7,968 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 236.

MYRA MINE (PARAMOUNT) (92F-72) Fig. C, No. 113)

By W. C. Robinson

LOCATION: Lat. 49° 34' Long. 125° 35' (92F/12E)
ALBERNI M.D. On the south slope of Myra Creek valley, 1 mile west of the south end of Buttle Lake.

CLAIMS: BEAR PAW, BEAVER PAW, RIGHT PAW, LEFT PAW (Lots 1344 to 1347), SOUTH PAW, WEST PAW, NORTH PAW, EAST PAW (Lots 1668 to 1671), and approximately 60 claims including W, ELK, and HAT.

OWNER: WESTERN MINES LIMITED, 1103, Three Bentall Centre, 595 Burrard Street, Vancouver; mine office, Myra Creek.

METALS: Zinc, silver, copper, lead, gold (production shown in Table 6).

DESCRIPTION: Massive, irregular, lens-shaped orebodies occur in altered acidic Sicker volcanic rocks.

WORK DONE: Drifting and crosscutting, 3,416 feet; raising, 3,266 feet; diamond drilling, 11,129 feet. The ore, which was mined by cut-and-fill method, was trucked to the nearby concentrator at the Lynx mine.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 235.

LYNX MINE (92F-71) (Fig. C, No. 114)

By W. C. Robinson

LOCATION: Lat. 49° 35' Long. 125° 36' (92F/12E)
ALBERNI M.D. On the north slope of Myra Creek valley, 1 mile west of the south end of Buttle Lake.

CLAIMS: PEARL, BETTY, ELWOOD, MINT, LYNX, COUGAR, BLUE GROUSE, BLUE JAY, RED SQUIRREL, GREY SQUIRREL, BESSIE B (Lots 1340 to 1342, 1659, 1660, 1663 to 1667), Mineral Lease M-19, comprising RED DEER, OTTER (Lots 1343, 1662), and approximately 75 claims including W, ELK, and MAR.

(92F/12W)

OWNER: WESTERN MINES LIMITED, 1103, Three Bentall Centre, 595 Burrard Street, Vancouver; mine office, Myra Creek.

METALS: Copper, zinc, lead, silver, gold (production shown in Table I).

DESCRIPTION: In summary, massive sulphide orebodies containing mainly chalcopyrite, galena, sphalerite, and pyrite occur in a gangue of quartz-sericite schist, calcite, and barite within a shear zone developed in andesite flows, volcanic breccias, and in massive and thin-bedded tuffs.

WORK DONE: Drifting and crosscutting, 6,464 feet; raising, 2,354 feet; diamond drilling, 50,550 feet. Approximately two-thirds of the ore was obtained from underground and one-third from the open pit. Most of the underground ore was mined by cut-and-fill method, with mill tailings being used for backfill. New construction during the year included an addition to the maintenance shop.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1964, pp. 157-166; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 235; Assessment Report 5184.

DONNER (Fig. C, No. 18)

LOCATION: Lat. 49° 44′ Long. 125° 58′ (92F/12W)
ALBERNI M.D. One mile west of the north end of Donner Lake.

CLAIMS: DONNER, HEBER, totalling approximately 20.

OWNERS: Clara Babkirk, Peter Chapko, and Bill Scott.

OPERATOR: LEO HURTUBISE, 3460 Chippendale Drive, Calgary, Alta.

WORK DONE: 1973 – surface diamond drilling, three holes totalling 313 feet; prospecting covering Donner 1-10, 42, 43 and Heber 3-6.

REFERENCE: Assessment Report 4972.

MOORE (92F-288) (Fig. C, No. 20)

LOCATION: Lat. 49° 51′ Long. 125° 33′ (92F/13E)
NANAIMO M.D. On the southeast shore of Upper Quinsam Lake.

CLAIMS: PEEVER, MOORE, totalling approximately 10.

OWNERS: R. C. Moore and John J. Peever.

OPERATOR: GETTY MINES, LIMITED, 622, 510 West Hastings Street, Vancouver.

WORK DONE: Percussion drilling, 14 holes totalling 4,530 feet on Moore 1 and Peever 1, 4.

REFERENCE: Assessment Report 5075.

IRON RIVER (92F-76) (Fig. C, No. 22)

LOCATION: Lat. 49° 55′ Long. 125° 26′ (92F/14W)
NANAIMO M.D. On Iron River 1.25 miles above its junction with the Quinsam River, at approximately 950 feet elevation.

CLAIMS: IR 1 to 14, SUE.

OWNER: TEXADA MINES LTD., Box 10, Gillies Bay.

METALS: Iron, copper.

DESCRIPTION: Mineralization consists of magnetite and chalcopyrite. An extensive skarn zone occurs in Karmutsen volcanic rocks adjacent to an elongate diorite stock.

WORK DONE: Linecutting and magnetometer survey, 4 miles, 100-foot grid spacing covering IR 1, 2, 5, 6 and Sue.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 252; Assessment Report 5300.

MT. WASHINGTON COPPER (92F-116, 117) (Fig. C, No. 21)

LOCATION: Lat. 49° 46' Long. 125° 18' (92F/14, 11)
NANAIMO M.D. Fifteen miles northwest of Courtenay, on the north side of Mount Washington, between 1,500 and 4,600 feet elevation.

CLAIMS: DOMINEER 1, 3, 4, 6 (Lots 91G to 94G) plus MTW, DOT, MWC, totalling approximately 256.

OWNER: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, gold, silver, minor molybdenum.

DESCRIPTION: The area is underlain by Karmutsen basalt which is unconformably overlain by Nanaimo Group sedimentary rocks. Both rock units are intruded by Tertiary diorite and intrusive breccia. Disseminated copper occurs in diorite and intrusive breccia and to a lesser extent in basalt and sedimentary rocks. Copper, gold, and silver occur in veins in altered zones.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering MWC 101-107, 109, 521-530, 536, 538, and 540; 1 inch equals 100 feet covering MWC 223-226, 228, 195; and 1 inch equals 50 feet covering MWC 204, 232, and 234; linecutting and magnetometer survey, 24.6 line-miles, 200 by 400-foot grid spacing covering MWC 101-107, 109, 116, 143, 195, 223-226, 228, 521-530, 536, 538, and 540; VH EM survey, 13.5 line-miles, 400-foot grid spacing covering MWC 105, 107, 109, 521-530, 536, 538, and 540 and AB EM survey, 15 line-miles, 400-foot grid spacing covering MWC 210-208, 210, 212, 222, 232, 234, 236, 502, 504 and Domineer 3, 4, 6; geochemical soil survey, 550 samples, 200-foot grid spacing, 20 line-miles covering MWC 103-106, 109, 116, 140, 143, 168, 223-226, 228, 526; surface diamond drilling, 21 holes totalling 4,396 feet on MWC 151, 202, 206, 208, 210, 232, and 234; trenching, 70 feet on MWC 151.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 236; Assessment Reports 5146, 5267.

BOLIVAR (92F-364) (Fig. C, No. 24)

By K. E. Northcote

LOCATION: Lat. 49° 46' Long. 124° 35' (92F/15E)
NANAIMO M.D. On Texada Island, one-half mile due west of the head of Sturt Bay.

CLAIMS: BOLIVAR, BOLIVAR 1 to 7, 12 to 23.

(92F/15E)

OWNER: F. J. BRENNAN, Box 2, Vananda.
METALS: Gold, silver.
DESCRIPTION:

GEOLOGICAL DESCRIPTION: The northern end of Texada Island is underlain by Quatsino limestone and Karmutsen basalt which are both intruded by Island Intrusions. Emplacement of the plutons resulted in recrystallization of limestone at intrusive contacts and along fractures and bedding planes. Contact metasomatic iron and copper mineralization is found at intrusive contacts with limestone and to a lesser extent with basalt. There have been reports of native gold occasionally being found during limestone quarrying operations and in 1972 native gold was found in limestone on the Bolivar claim.

The Bolivar claims (Fig. 23) are underlain by Quatsino limestone which has digitating contact with Karmutsen basalt. An irregular wedge, thinning to the northwest, of altered, leucocratic, intrusive rock follows an old structure nearly paralleling a limestone-basalt contact on the Bolivar and Bolivar 1 claims. The altered, intrusive wedge pinches out just to the southeast of the trench containing native gold on the Bolivar claim (Fig. 23). Some mineralization occurs within the altered leucocratic intrusive rocks and in the locally skarnified limestone and basalt associated with the intrusive rocks.

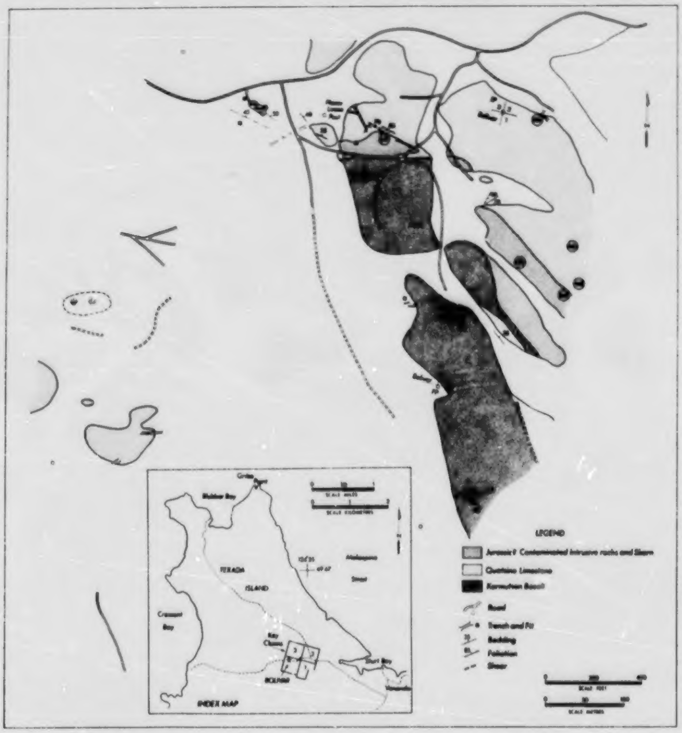

LEGEND
Jurassic? Contaminated Intrusive rocks and Skarn
Quatsino Limestone
Karmutsen Basalt
Road
Trench and Pit
Bedding
Foliation
Shear
SCALE FEET
SCALE METRES
TEXADA
ISLAND
Malaspina
Strait
Bolivar
Vananda
INDEX MAP

Figure 23. Geology of the Bolivar claims, Texada Island.

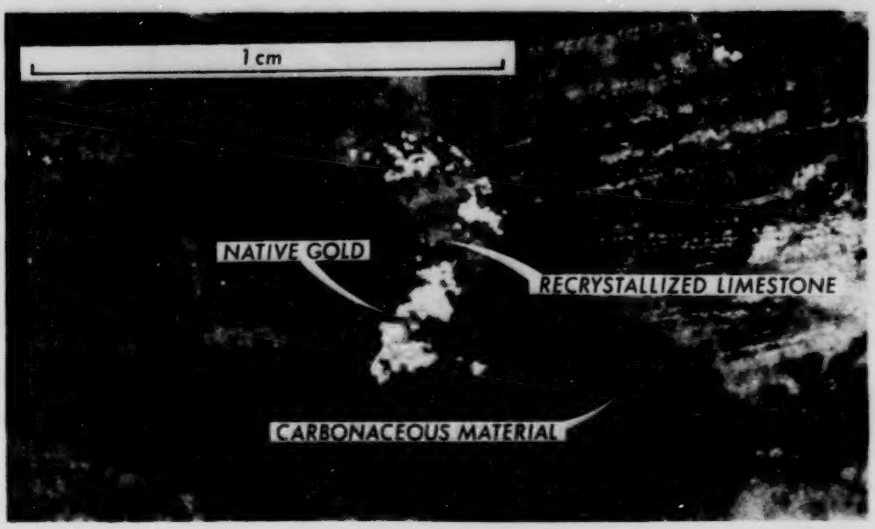

1 cm
NATIVE GOLD
RECRYSTALLIZED LIMESTONE
CARBONACEOUS MATERIAL

Plate IIA. Native gold in recrystallized limestone on Bolivar prospect, Texada Island.

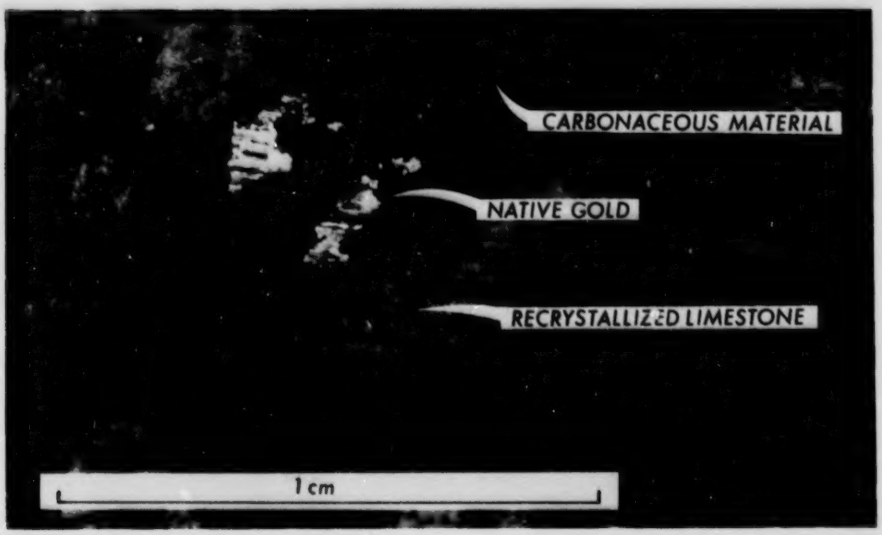

CARBONACEOUS MATERIAL
NATIVE GOLD
RECRYSTALLIZED LIMESTONE
1 cm

Plate IIB. Native gold in recrystallized limestone on Bolivar prospect, Texada Island.

KARMUTSEN FORMATION: The Karmutsen Formation, underlying the Bolivar claims, consists of thick-bedded amygdaloidal and massive basalt flows which locally are abundantly epidotized and cut by quartz veins.

MINERALIZATION IN KARMUTSEN

(a) *Quartz Veins:* Quartz veins carrying pyrite and lesser amounts of pyrrhotite and chalcopyrite are common in Karmutsen rocks in this area. The veins are of varied attitudes and thicknesses ranging from a fraction of a centimetre to 50 centimetres or more in width. Some of the larger, better mineralized veins were explored by pits and trenches early in the century. Samples from two of the better mineralized veins (Fig. 23) were tested for gold and silver and gave the following results: 74-KN-446 – gold, 0.03 ounce per ton; silver, trace and 74-KN-442 – gold, trace; silver, trace.

(b) *Zones of Epidotization:* Locally intense zones of epidotization are accompanied by some silicification with pyrite, pyrrhotite, and chalcopyrite mineralization. These altered zones are probably the result of Jurassic (?) intrusive activity. Sample 74-KN-424 (Fig. 23), representing the better mineralized material, was tested for gold and silver content and gave the following results: copper, 2.04 per cent; gold, 0.07 ounce per ton; silver, 1.2 ounces per ton.

QUATSINO FORMATION: The Quatsino Formation is composed mainly of fine-grained grey limestone which shows varying degrees of recrystallization to marble. In some areas the limestone is almost completely recrystallized whereas in others interrupted, sinuous, lenticular, plastically deformed layers of fine-grained, medium grey limestone, generally approximating the regional attitude of bedding, are left in a coarser recrystallized matrix. In still other areas the only evidence of recrystallization are merely thin vein-like zones and small isolated blobs.

During the process of recrystallization of the limestone impurities were expelled and collected in pockets and sinuous partings within the marble and along the outer margins of recrystallized zones. Much of this black material has a very fine carbonaceous appearance although locally it is coarsely granular. It is amorphous and is composed largely of carbon. Other constituents, in terms of percentage determined by semiquantitative spectrographic analysis, are as follows: silicon, trace; aluminium, trace; magnesium, trace; calcium, 0.1; iron, 0.02; lead, 0.1; copper, 0.03; zinc, 2.0 (+); manganese, trace; silver, trace; nickel, 0.01; cadmium, 0.02.

Irregular filigree stringers and partings of siliceous material are noticeable on weathered limestone surfaces particularly at the main trench on the Bolivar claim.

The Quatsino limestone is cut by numerous dykes of dark, fine-grained basaltic andesite (?). On the northeast part of Figure 23 there are zones of sugary textured dolomitic limestone which tend to be more resistant to erosion than the surrounding limestone.

MINERALIZATION IN QUATSINO FORMATION: Native gold was observed in the trenches on the Bolivar claim (Fig. 24). It occurs as specks and narrow filigree lenses up to about 3 centimetres in largest dimension in recrystallized limestone and as flecks in black carbonaceous material (Plate IIA and IIB). A number of samples, some showing free gold, were taken from the trench and assayed. They gave the following results:

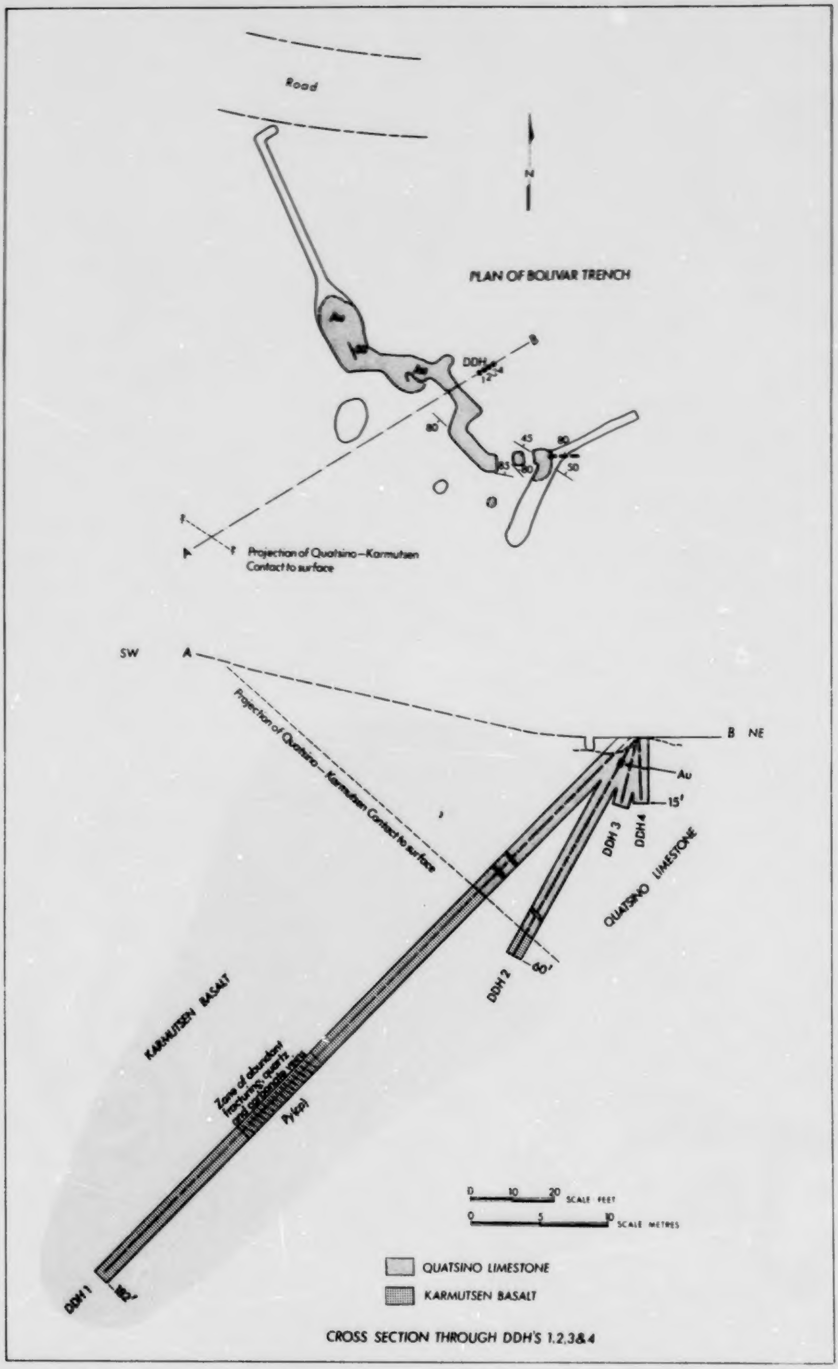

Road
N
PLAN OF BOLIVAR TRENCH
Au
DDH 1,2,3,4
B
80
45
80
85
80
50
A
Projection of Quatsino – Karmutsen Contact to surface
SW
A
B
NE
Au
15'
Projection of Quatsino – Karmutsen Contact to surface
DDH 3
DDH 4
QUATSINO LIMESTONE
60'
DDH 2
KARMUTSEN BASALT
Zone of abundant fracturing, quartz and carbonate veins
Py(cp)
0 10 20 SCALE FEET
0 5 10 SCALE METRES
QUATSINO LIMESTONE
KARMUTSEN BASALT
DDH 1
182'
CROSS SECTION THROUGH DDH'S 1,2,3&4

Figure 24. Trench and drill holes, Bolivar claims, Texada Island.

Sample	Gold *ounce per ton*	Silver *ounce per ton*
11322 M	9.53	1.8
11324 M	trace	0.4
11325 M	trace	0.3
11326 M	trace	0.1
11327 M	nil	nil
11328 M	0.01	trace
11329 M	0.01	trace
11330 M	0.03	trace

An analysis of the gold resulted in a value of 866 fine. Pyrite is also present in recrystallized limestone but is most abundant in the carbonaceous material. Some interesting gold particles and nuggets have been panned from the soil layer overlying the weathered limestone surface. At the time the property was visited in September 1974, four drill holes had been completed (Fig. 24). Flecks of native gold were notably visible in diamond-drill hole 2 in the interval 6.4 to 7.4 feet (2 to 2.25 metres). There appears to be no easy way to predict where the flecks and filigree blebs of gold will occur. They have a random distribution and recrystallized limestone containing gold is identical to barren recrystallized limestone.

LEUCOCRATIC, ALTERED INTRUSIVE ROCKS: An irregular wedge of siliceous, skarnified rock subparallels a limestone-basalt contact and pinches out in the vicinity of the native gold showing on the Bolivar claim (Fig. 23). The wedge of latered rocks probably represents crystallized siliceous magma emanating from an intrusive body lying to the southeast. As the magma permeated along fractures and zones of weakness in the limestone and basalt wallrocks it became contaminated. The result is a nondescript mixture of quartz, sericitized feldspar, epidote, chlorite, amphibole, secondary biotite with traces of apatite and containing some disseminated pyrite and minor chalcopyrite. The native gold occurring in recrystallized limestone at the distal end of this zone may be related to this magmatic material.

The results of assays of mineralized samples (Fig. 23) from the altered intrusive rocks are as follows: 74-KN-467 – gold, trace; silver, trace and 74-KN-458 – gold, trace; silver, trace.

WORK DONE: Surface diamond drilling.
REFERENCE: Assessment Report 5019.

CRESCENT (Fig. C, No. 17)

LOCATION: Lat. 49° 48′ Long. 124° 37′ (92F/15E)
NANAIMO M.D. On Texada Island, extending northeasterly from Crescent Bay.
CLAIMS: CRESCENT 1 to 8, 11 to 19.
OWNERS: R. A. SAMUELSON, 1172 Barclay, Vancouver and KARL H. CHRISTENSEN, Vananda.

DESCRIPTION: Karmutsen volcanic rocks and Bonanza limestone contain disseminated pyrite.
WORK DONE: Surface diamond drilling, four holes totalling 241 feet on Crescent 2, 11, and 12.
REFERENCE: Assessment Report 5234.

FLORENCE (92F-147, 148, 170) (Fig. C, No. 23)

LOCATION: Lat. 49° 57' Long. 124° 42' (92F/15E)
VANCOUVER M.D. Eleven miles northwest of Powell River, along the coast of the Strait of Georgia and extending northerly toward Okeover Inlet.
CLAIMS: LUN, totalling approximately 20.
OWNERS: K. WARREN GEIGER, Box 368, Rocky Mountain House, Alta. and J. A. STEWART, 1430 Victoria Drive, Port Coquitlam.
METALS: Silver, copper, zinc.
DESCRIPTION: Limestone engulfed by batholithic intrusions of the Coast Plutonic Complex is further intruded by small stocks of diorite and many dykes and sills which range in composition from pegmatitic granite to gabbro. Skarn has developed locally. Pyrrhotite, pyrite, and lesser chalcopyrite are disseminated in some intrusive rocks and chalcopyrite and sphalerite, accompanied by minor bornite and galena, occur as pods and disseminations in skarn.
WORK DONE: Geological mapping of surface at 1 inch equals 100 feet and of Florence adit at 1 inch equals 50 feet; 53 rock samples taken from Florence adit; linecutting, 8.8 miles of grid; geochemical soil survey, 280 samples taken at 100 by 200-foot centres; and self-potential survey, 1.5 line-miles covering Lun 1, 2, 7-10, 12-24.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1924, p. 246; 1925, p. 290; Assessment Report 4961.

OK (92K-8) (Fig. C, No. 32)

LOCATION: Lat. 50° 03' Long. 124° 40' (92K/2E; 92F/15E)
Report on this property in section 92K/2E.

VANCOUVER 92G

CLEVELAND (92G-85) (Fig. C, No. 101)

LOCATION: Lat. 49° 17' Long. 122° 03' (92G/8E)
NEW WESTMINSTER M.D. Seventeen miles northeast of Mission City, on Norrish Creek, 2.5 miles southeast of Dickson Lake.
CLAIMS: CLEVELAND 1 and 2, LOGAN 1 to 9, ALBERT 1 and 2 Fractions.

(92G/11E)

OWNER: C. S. LOWRY, 253 Clifton Road North, Kelowna.

METALS: Copper, zinc, bismuth, silver.

DESCRIPTION: A pendant or inclusion of tuff and porphyritic volcanic rocks occurs in Coast Plutonic granitic rocks. Quartz veins in the volcanic rocks carry pyrite, pyrrhotite, chalcopyrite, sphalerite, native bismuth, magnetite, and minor ilmenite.

WORK DONE: Linecutting, 3.2 miles of grid; magnetometer and electromagnetic survey; geochemical soil survey, 152 samples taken at 100 by 200-foot grid spacing covering Cleveland 1, 2 and Logan 2-4, 9.

REFERENCE: Assessment Report 5244.

BRITANNIA MINE (92G-82) (Fig. C, No. 104)

By A. Sutherland Brown

LOCATION: Lat. 49° 36′ Long. 123° 20′ (92G/11E)
VANCOUVER M.D. The Britannia mine has its main portal at Britannia Beach on the east side of Howe Sound, 64 kilometres (40 miles) north of Vancouver.

CLAIMS: The No. 10 mine area is located under the Crown-granted claims MINERAL CREEK (Lot 1894), DAISY (Lot 1899), NEWCASTLE (Lot 1936), and NANCY FR. (Lot 1997). The property consists of approximately 560 claims.

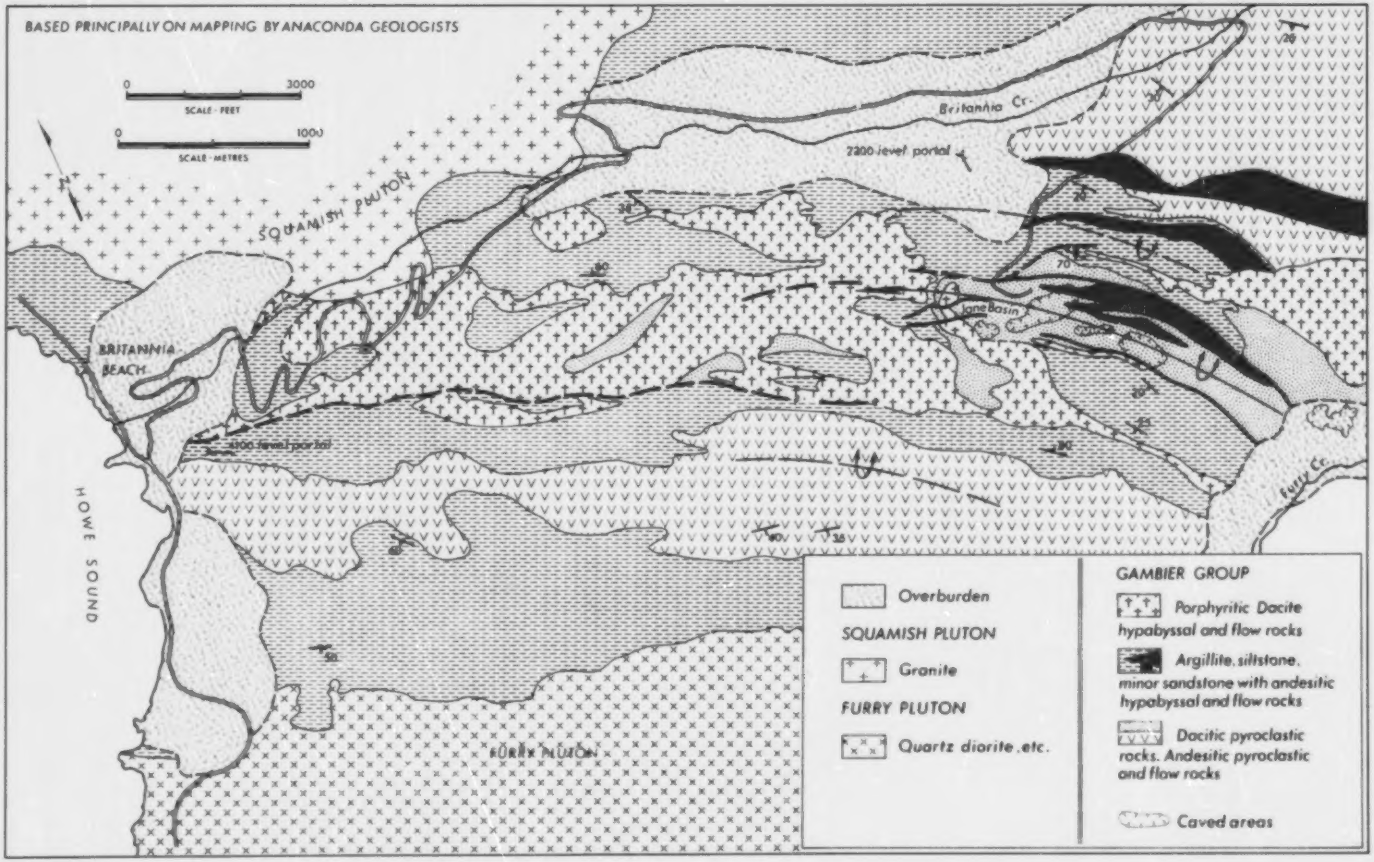
OWNER: ANACONDA CANADA LIMITED, Anaconda Britannia Mines Division, Britannia Beach.

METALS: Copper, (zinc) (production shown on Table 6).

DESCRIPTION:

The Britannia mine, which has produced copper since 1905, closed at the end of October 1974. It has been the leading copper producer of the Province, having mined 52,783,964 tons containing 1,139,223,376 pounds of copper, 276,220,086 pounds of zinc, 492,968 ounces of gold, 5,814,026 ounces of silver, 34,310,727 pounds of lead, and 980,631 pounds of cadmium. The Anaconda Company purchased the Britannia mine from the Howe Sound Company in January 1963, and up to cessation of production produced 6,234,383 tons, containing 146,946,859 pounds of copper. This amounted to roughly 13 per cent of the total production.

Anaconda pursued a vigorous internal exploration programme, particularly prior to the last three or four years. In 1973, 20,674 feet of diamond drilling was carried out. The early programme (1963-1969) resulted in the discovery of the No. 10 orebody which was stated to contain about 3 million tons grading 1.5 per cent copper without significant zinc. To mine this body a new shaft, No. 10, was sunk with some difficulty from 4100 level to 5700 level. Production from No. 10 orebody started at the very end of 1970. At that time the remaining ore in the Victoria was depleted and the shaft abandoned. The Bluff orebody was depleted of mineable underground ore in 1971 and No. 8 orebody before closure of the mine. The status of No. 10 mine reserves is considered after a brief review of the geology of the Britannia mine. Greater detail can be found in *Geology, Exploration and Mining in British Columbia,* 1970 (pp. 233-246).



BASED PRINCIPALLY ON MAPPING BY ANACONDA GEOLOGISTS
0
3000
SCALE - FEET
0
1000
SCALE - METRES
N
SQUAMISH PLUTON
Britannia Cr.
2200 level portal
Jane Basin
BRITANNIA BEACH
4100 level portal
HOWE SOUND
FURRY PLUTON
Furry Cr.
70
30
80
50
35
Overburden
SQUAMISH PLUTON
Granite
FURRY PLUTON
Quartz diorite, etc.
GAMBIER GROUP
Porphyritic Dacite hypabyssal and flow rocks
Argillite, siltstone, minor sandstone with andesitic hypabyssal and flow rocks
Dacitic pyroclastic rocks. Andesitic pyroclastic and flow rocks
Caved areas

Figure 25. Generalized geology of Britannia mine area, Anaconda Canada Limited.

The geology of the Britannia mine has presented a problem for three-quarters of a century because of the complexity of the stratigraphy and structure, the variation of metamorphism, and new concepts of ore genesis. Valid concepts are particularly important in this area where relatively large and metal-rich orebodies have small cross-sectional areas and are contained in a favourable belt many miles long. The following review is the writer's interpretation of current thinking with respect to geology.

The Britannia mine is a massive sulphide deposit consisting of numerous discrete orebodies and mineralized lenses that occur in a linear deformed belt in a pendant of Cretaceous volcanic and sedimentary rocks within the Coast Plutonic Complex.

The stratigraphy of the Britannia pendant is grossly simple but very complex in detail because of rapid facies changes due to the lenticular nature of some rock units, intercalation of dykes and sills similar to adjacent flows or domes, and the superimposed metamorphism in the deformed belt. The relevant part of the pendant is formed of a thick basal pile of andesitic to dacitic pyroclastic rocks with lesser flows and domes overlain by a clastic sedimentary sequence dominated by argillite but also containing minor volcanic rocks. The whole sequence is cut by a large number of irregular bodies of dacite porphyry, most of which are clearly intrusive lenses although some may be intercalated flow domes. A homotaxial stratigraphic sequence 10 kilometres south of Britannia contains Albian ammonites within the argillite unit. The Squamish granite, an epizonal pluton dated as 92±4 m.y., intrudes the pendant north of Britannia Creek where it hornfelses the dacite porphyry bodies that are younger than ore deposition and major deformation. Therefore all the critical events took place within a few million years.

In the vicinity of the outcrop of Britannia orebodies in the Jane Basin, the stratigraphy is particularly difficult to decipher because of the contrast of deformed and undeformed rocks and hydrothermal alteration. The top of the pyroclastic sequence here consists of dacitic crystal-rich pyroclastic flow rocks that become generally finer grained upward. These terminate with intercalated plagioclase crystal tuffs interbedded with argillite above which is a thin sequence of green siltstones of andesitic character that appear to grade rapidly northward to thicker vesicular andesitic pyroclastic rocks.

Figure 25 is a simplified map based mainly on detailed work by Anaconda geologists, notably John Payne and David Jennings, and interpreted in the light of the writer's previous mapping.

The northern part of Britannia pendant generally dips gently southward to the deformed belt where it is disrupted by a compressed anticline-syncline pair that can be considered analogous to a large kink band. Faulting is localized on the limbs and these faults appear to have been subjected to later shear movement. The rocks within the deformed belt are converted to schists except for late dacite porphyry intrusive bodies which are only sheared along their margins.

Mineralized bodies are distributed along the deformed belt and orebodies have been mined for 4 kilometres (2.5 miles) between the Victoria mine in the east to the No. 10 in the west (Fig. 26). The orebodies consist of massive sulphide and stringer lodes with minor tabular bodies. Mineralization of some kind is commonly found near the contact between the top of the crystal-rich dacitic pyroclastic rocks and the green andesitic siltstones. The No. 10 orebody, the latest to be discovered and mined, is in the hangingwall of the deformed belt whereas most of the other zones are at or near the footwall. Some of the stringer lodes, such as the Fairview veins, transect schistosity at a small angle but are mostly on the footwall side of the belt. The massive bodies and stringer lodes are similar in that they consist dominantly of pyrite with chalcopyrite and sphalerite, minor galena and tennantite, and accompanying quartz and altered host rock. The textures of undeformed massive bodies resemble the stringer lodes but in some locations there has obviously been deformation, flow, and annealing of some parts of some of the massive bodies. A zoning of ore and hydrothermal alteration minerals is evident in many bodies, showing a high-grade chalcopyrite-rich core and a pyritic periphery. Sphalerite is concentrated in the upper central parts of some orebodies. The silicate minerals show a gradation from an inner quartz-sericite zone to an outer chlorite-epidote zone. Anhydrite and gypsum are common, but do not seem to have a systematic distribution except that they are commonly associated with pyritic green siltstones. Two sulphide-rich bodies appear to be truly stratified, the Fairview zinc and pyritic green siltstones. The former is a poorly banded body consisting of sphalerite, pyrite, and barite that is parallel to stratification in a less deformed part of the overlying pyritic green siltstones. The latter consists of normal green siltstone with nodules and disrupted laminae rich in pyrite.

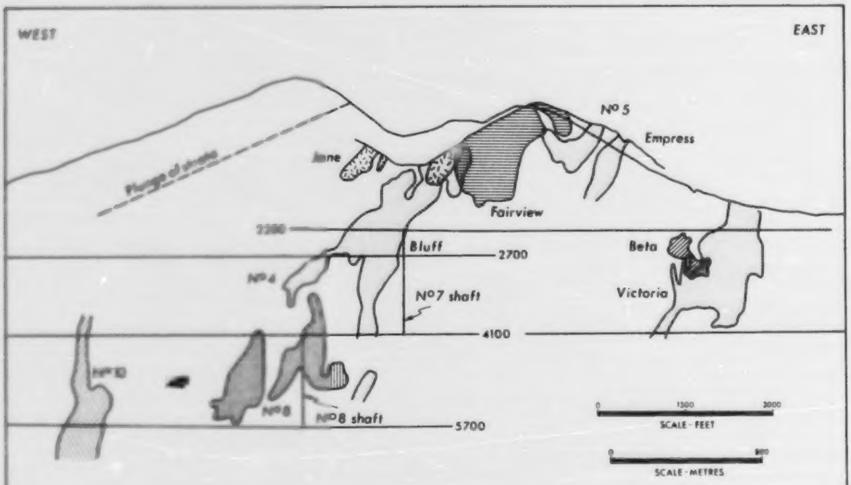


Figure 26. Longitudinal section, Britannia mine, Anaconda Canada Limited.

The writer concluded in 1970 that while the Britannia deposit was volcanogenic in nature, most of the orebodies were in fact stringer lodes, or in Japanese terminology, keiko ore, with only the zinc and pyritic beds truly syngenetic. Since then Anaconda geologists have interpreted that most orebodies are disrupted fragments of two original massive sulphide orebodies.

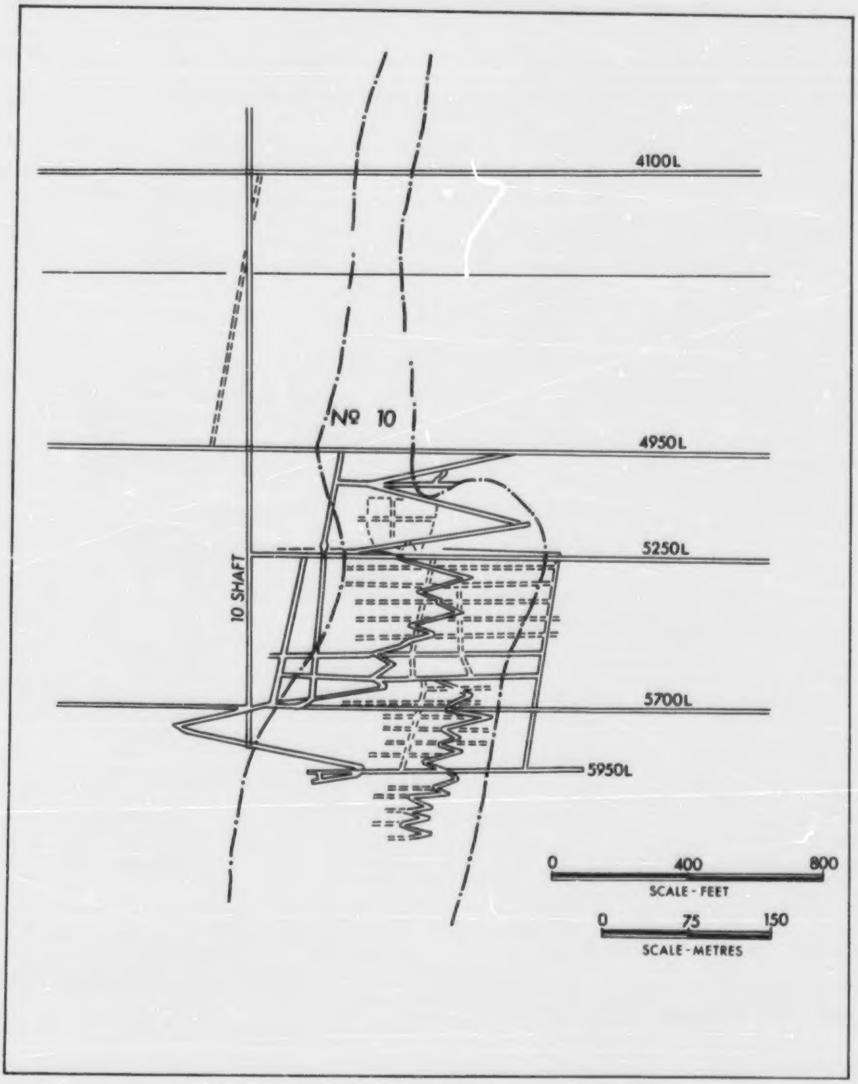

4100L
Nº 10
4950L
5250L
10 SHAFT
5700L
5950L
0
400
800
SCALE - FEET
0
75
150
SCALE - METRES

Figure 27. Longitudinal section, No. 10 mine, Anaconda Canada Limited.

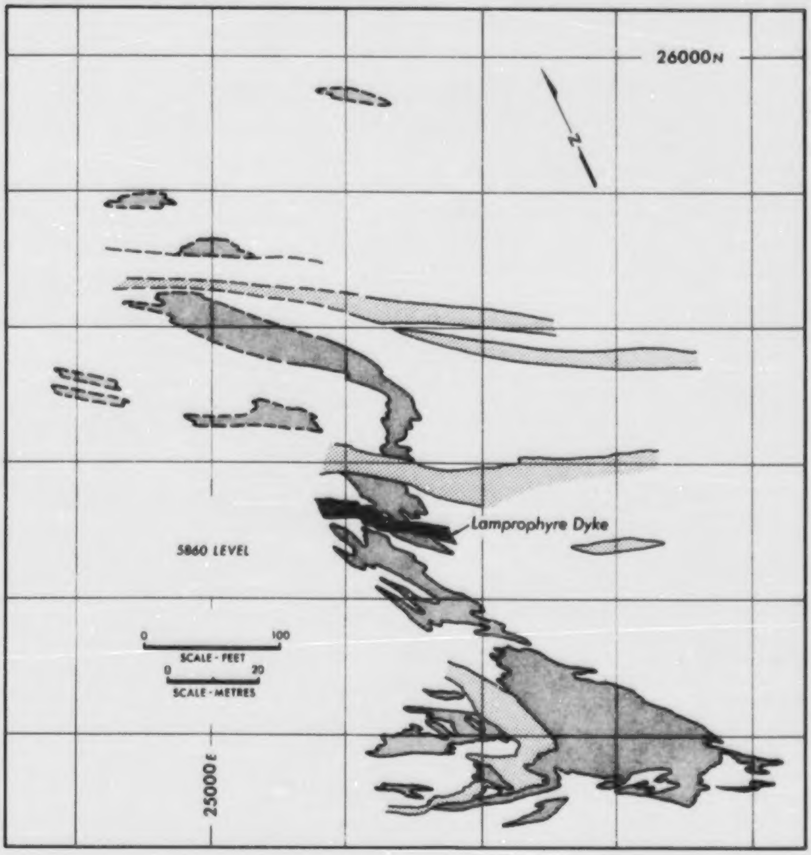

26000N
N
Lamprophyre Dyke
5860 LEVEL
0
100
SCALE - FEET
0
20
SCALE - METRES
25000E

Figure 28. Plan of No. 10 orebody, 5860 level, showing ore outline (dense stipple) and dacite dykes, Anaconda Canada Limited.

NO. 10 MINE: Figure 26 shows the relationship in longitudinal section between No. 10 and the other orebodies and Figure 27 shows some details of development. The No. 10 orebody has considerable continuity in elevation but in section has been found to change shape rapidly and to have an attenuated, frayed outline in plan (Fig. 28). The orebody, which is mined out above 5670 level, has produced 1,910,000 tons at a diluted grade of 1.25 per cent copper. The status of mineral reserves below 5670 level is shown in the following table.

RESERVES IN PLACE

Level	Tonnage	Copper Grade in Place *Per Cent*	Category
5670 – 5900	242,000	1.9	Measured and developed
	271,000	1.9	Measured and partially developed
5900 – 6100	317,000	1.9	Measured and undeveloped
6100 – 6500	740,000	1.9	Drill indicated
6500 – 6700	None allowed		
TOTAL	1,570,000	1.9	All categories

PRECIPITATION PLANT: The precipitation plants at 2200 portal and the beach currently handle all mine waters and have a production rate of 34,000 pounds of copper per month. The production has decreased very slightly since 1965 when all mine waters were first treated. Production will continue but can probably be expected to decrease to some degree without active mining.

WORK DONE:

During 1974, development work in the Britannia mine consisted of 5,196 feet of trackless drifting, 322 feet of sublevel drifting, and 802 feet of conventional-type raising. For exploration purposes, 789 feet of drift was driven and 15,993 feet of diamond drilling was done to explore for new orebodies and to test for the extensions of known orebodies.

The crew consisted of an average of 122 men underground and 149 men and women on surface.

Mining continued in three stopes in the No. 8 shaft mine. The No. 11 winze was completed and was brought into production. Most of the mine production came from the No. 11 winze and from the No. 10 shaft mine. Some ore was removed from the open pit at the Jane Basin during the year. This ore was hauled down the road by contract trucks and dumped into the ore pocket just above the 4100 level. During the 10 months of operation 399,164 tons of ore was milled to produce 16,761 tons of copper concentrate.

Mining and milling operations at the Britannia mine ceased on November 1, 1974. Removal of all of the underground, mill, and plant equipment was started immediately. Removal of the equipment was expected to take about six months.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, pp. 233-246; 1972, pp. 275, 276; 1973, p. 239; Payne, J. G., Pratt, J. A., and Stone, B. G. (1974), Britannia, a deformed Mesozoic volcanogenic copper-zinc deposit, *Geol. Ass. Can.,* Cordilleran Section, Symposium, Volcanic Geology and Mineral Deposits of the Canadian Cordillera, abstract; Sutherland Brown, A. (1972), Britannia, *Intern. Geol. Congress,* Guidebook, 24th Session, Field Excursion A09-C09, pp. 7-14.

CAMBRIAN CHIEFTAIN, DAY (92G-23, 77) (Fig. C, No. 26)

LOCATION: Lat. 49° 41′ Long. 123° 58′ (92G/12W)
VANCOUVER M.D. On the northwest flank of the Caren Range in the central part of the Sechelt Peninsula, extending along Highway 101 toward Ruby Lake on the north, at approximately 3,300 feet elevation.

CLAIMS: DAY 7 to 9, 8A, BEV 1 to 4, JOHN 1 to 10, EDDY 1 to 8.

OWNER: CONE MT. MINES LTD., 8167 Main Street, Vancouver.

METALS: Copper, zinc, silver, gold.

DESCRIPTION: Volcanic and sedimentary rocks of the Jarvis Group are engulfed by granodiorite and quartz diorite. A 20-foot-wide shear zone in granodiorite on Day 7-10 carried some chalcopyrite, molybdenite, pyrite, and sphalerite. The Cambrian Chieftain prospect crosses Bev 1 and consists of vein-like bodies of chalcopyrite, pyrite, magnetite, and sphalerite along a contact between chert and thin-bedded limestone and in skarn developed from the limestone.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Bev 1-4, Day 7-10, Eddy 1-8, and John 5-10.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* Bull. 39, p. 37; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 242; Assessment Reports 3757, 5006.

ESTELLA (Fig. C, No. 25)

LOCATION: Lat. 49° 43′ Long. 123° 58′ (92G/12W)
VANCOUVER M.D. South of Klein Lake, in the north-central part of the Sechelt Peninsula, between 200 and 900 feet elevation.

CLAIMS: ESTELLA 1 to 18.

OWNER: R. O. Sarky.

OPERATOR: NORDIC MANAGEMENT & DEVELOPMENT LTD., 8167 Main Street, Vancouver.

DESCRIPTION: The claims are underlain by quartz diorites and granodiorites which contain inclusions of older rocks.

WORK DONE: Geochemical soil survey, 91 samples taken at 100 by 400-foot grid spacing covering Estella 8, 13, 15, and 17.

REFERENCE: Assessment Report 5007.

VENETIAN (92G-69) (Fig. C, No. 27)

LOCATION: Lat. 50° 00′ Long. 123° 06′ (92G/14E; 92J/3E)
VANCOUVER M.D. Twenty miles north of Squamish, on the east side of Daisy Lake, at approximately 2,500 feet elevation.

CLAIMS: DAISY 1 to 8, FF 1 to 14, RON 1 to 12, J 1 to 10, S 1 to 26.

OWNER: ACACIA MINERAL DEVELOPMENT CORPORATION LTD., 429, 470 Granville Street, Vancouver.

METALS: Copper, gold, silver.

WORK DONE: Trenching, approximately 1,200 feet and stripping, approximately 5,000 feet on all claims; underground work, 30 feet on Daisy 3 and 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 279.

PEMBERTON 92J

VENETIAN (92G-69) (Fig. C, No. 27)

LOCATION: Lat. 50° 00′ Long. 123° 06′ (92G/14E; 92J/3E)
Report on this property in section 92G/14E.

BLUE JACK (92J-51) (Fig. C, No. 37)

LOCATION: Lat. 50° 04′ Long. 123° 08′ (92J/3E)
VANCOUVER M.D. One to 5 miles north of Brandywine Falls, between 1,450 and 3,500 feet elevation.

CLAIMS: SUNNY CAVE, PETER 1, ASH, THYNE, ELM, MINE, MIL, SPINE, VERN 8, BRU, JO, LU, STAR 1 and 2, SUN 1 to 7, MAT 1 to 8, MIL 1 to 12, SNOW 1 to 15, 22 to 24, SUNNY CAVE 1 to 28, VAN 1 to 43, 71, 73, 75 to 79, 81 to 83, 89, 90.

OWNER: VAN SILVER EXPLORATIONS LTD., 501, 409 Granville Street, Vancouver.

METALS: Gold, silver, lead, zinc, copper.

DESCRIPTION: Limestone, fine-grained, limy greenstone, diorite, dacite, quartz diorite, and minor rhyolite have been intruded by granodiorite and quartz diorite of the Coast Plutonic Complex. Aphanitic felsite dykes intrude all of the above rock types. Mineralization includes gold, tetrahedirte, galena, sphalerite, pyrite, and chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Sunny Cave 4-11 and Vern 8; surface diamond drilling, 13 holes totalling 1,861 feet on Sunny Cave 12, 18, 19, 23, Spine, Mat 8, and Star 2.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1936, p. F56; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 243; Assessment Reports 4939, 4950.

CALLAGHAN (92J-45) (Fig. C, No. 38)

LOCATION: Lat. 50° 05' Long. 123° 09' (92J/3E)
VANCOUVER M.D. Two and one-half miles west-northwest of McGuire Station, Brandywine Falls area, between 3,350 and 3,430 feet elevation.
CLAIMS: BOB 1 to 34, LUX 1 to 4, TEDI.
OWNER: Tedi Resources Ltd.
OPERATOR: VAN SILVER EXPLORATIONS LTD., 501, 409 Granville Street, Vancouver.
METALS: Silver, lead, zinc, copper.
DESCRIPTION: The claims are underlain mainly by schistose, intermediate to basic volcanic rocks. Quartz-carbonate stringers in andesites and diorites contain galena, sphalerite, chalcopyrite, and pyrite.
WORK DONE: Surface geological mapping, 1 inch equals 100 feet and 1 inch equals 400 feet covering Tedi; surface diamond drilling, 16 holes totalling 3,863 feet on Bob 25 and Tedi.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 307 (Astra, Cambria); Assessment Reports 4937, 4942, 4952.

COAST (Fig. C, No. 41)

LOCATION: Lat. 50° 05' Long. 123° 01' (92J/3E)
VANCOUVER M.D. One mile south-southwest of Alpha Lake.
CLAIMS: COAST 1 to 26.
OWNER: L.P. INDUSTRIES LTD., 617, 789 West Pender Street, Vancouver.
WORK DONE: Geochemical soil survey, 302 samples taken at 200 by 400-foot grid spacing covering Coast 1-10.
REFERENCE: Assessment Report 5174.

SIL (Fig. C, No. 42)

LOCATION: Lat. 50° 05' Long. 123° 05' (92J/3E)
VANCOUVER M.D. Four miles north-northeast of Brandywine Falls, at approximately 4,000 feet elevation.
CLAIMS: SIL 1 to 46.
OWNERS: HIGHHAWK MINES LIMITED and SPROAT SILVER MINES LTD., 333, 885 Dunsmuir Street, Vancouver.
WORK DONE: Road construction, one-third mile on Sil 16 and 32; trenching, 200 feet on Sil 16.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 244.

KAY (92J-117) (Fig. C, No. 40)

LOCATION: Lat. 50° 06' Long. 123° 07' (92J/3E)
VANCOUVER M.D. Five miles north-northwest of Brandywine Falls, at approximately 3,000 feet elevation.

(92J/3E)

CLAIMS: KAY 1 to 33, VAN 63, 64, 69 to 74.

OWNERS: CONSOLIDATED STANDARD MINES LTD., YUKON GOLD PLACERS LIMITED, and VAN SILVER EXPLORATIONS LTD., c/o 333, 885 Dunsmuir Street, Vancouver.

METALS: Gold, silver, lead, zinc, copper.

DESCRIPTION: The area is underlain by andesitic volcanic rocks cut by dykes of basalt. Quartz-carbonate veinlets and shear zones are mineralized with galena, sphalerite, and minor chalcopyrite.

WORK DONE: Magnetometer, VLF EM, and self-potential survey, 8.7 line-miles, 200-foot grid spacing covering Kay 7, 8, 10, 12, 14; geochemical soil survey, 615 samples, 200-foot grid spacing, 14 line-miles covering Kay 8, 10, 12, 14, 31-33 and Van 63, 64, 69-74; trenching, 80 feet on Van 71 and Kay 31; stripping, 400 by 10 feet on Kay 14.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 244; Assessment Report 5069.

JEEP, HILL (Fig. C, No. 39)

LOCATION: Lat. 50° 07′ Long. 123° 01′ (92J/3E)
VANCOUVER M.D. Two miles southwest of Alta Lake.

CLAIMS: HILL 2 to 4, JEEP 5 to 8.

OWNER: L.P. INDUSTRIES LTD., 617, 789 West Pender Street, Vancouver.

WORK DONE: Geochemical soil survey, 203 samples taken at 200 by 400-foot grid spacing; linecutting, 7.5 miles of grid covering all claims.

REFERENCE: Assessment Report 5042.

WARMAN (92J-89) (Fig. C, No. 30) By J. W. Robinson and E. W. Grove

LOCATION: Lat. 50° 08′ Long. 123° 06′ (92J/3E)
VANCOUVER M.D. Seven miles north of Brandywine Falls, on the east side of Callaghan Creek, at approximately 3,500 feet elevation.

CLAIMS: WARMAN 1 to 18, DOG 1 to 15, 28 to 31, 46, 47, 50, 52, 55, 63 to 66, CAT 1 to 10, 19 to 32, 35 to 38, CAT 1 to 5 Fractions, BERT 1 to 4 Fractions, LORI 13 to 24, 37 to 48.

OWNER: NORTHAIR MINES LTD., 333, 885 Dunsmuir Street, Vancouver V6C 1N5.

METALS: Gold, silver, copper, lead, zinc (production shown on Table 6).

DESCRIPTION:

GENERAL GEOLOGY: In the general vicinity of the property the country rocks comprise a mixed sequence of predominantly massive fragmental andesitic to basaltic volcanic rocks. In the mine, thin-bedded epiclastic volcanic lenses suggest a steep-dipping, northwesterly trending structure involving fragmental, epiclastic, and flow volcanic units. A thin, rhyolitic welded tuff member, intersected by the 3700 level crosscut near the portal, lies crudely subparallel to the main vein system. Samples of rhyolite glass found within a thin irregular ash layer overlying the tuff yielded a whole rock K-Ar age of about 18 m.y. To the south and west of the mine, the volcanic sequence has been intruded by granitic plutons. These, the volcanic rocks, and the Northair veins have been transected by dioritic and basaltic dykes. A small swarm of narrow basalt dykes trends northerly along the fault-offset zone that separates the Manifold and Warman vein segments (GEM, 1973, Fig. 19).

Immediately west of the Northair mine, the volcanic and granitic country rocks are overlain by Upper Tertiary to Recent dacitic, andesitic, and basaltic strato-volcanic complexes which occur along an extensive linear zone that extends from Garibaldi to the head of the Taseko River. Recent mapping and study by mining companies and the Geological Survey of Canada have also disclosed that a belt of small Miocene (?) plutons is essentially co-linear with the Neogene lavas. Numerous mineral occurrences are known along this belt including the Salal Creek porphyry molybdenite prospect and the Northair gold-silver veins.

MINERALIZATION: Assuming that the Discovery, Warman, and Manifold zones represent faulted segments of a single vein system, metal zoning becomes one of the most significant aspects of the deposit. To date continuity has been shown by drifting along the Warman and Manifold segments, but only diamond drilling has been done in the Discovery zone which remains open to further exploration. From the Discovery zone on the northwest to the Manifold on the southeast the apparent metal zoning is zinc-lead, copper-zinc-lead, gold, gold-silver, and silver over an apparent vein length of about 1,400 metres. Exploration is still too limited to quantify and postulate meaningful zoning patterns with depth. Close sampling by the operators suggests that the gold values along the vein system approximate a smooth assay curve except where the vein has been cut by the dykes. This probably represents another example of high gold mobility and late mobilization into open space provided by the fracturing attendant upon dyke injection. The apparent gradational metal zoning within the Northair vein system is consistent with the accepted hydrothermal concept of vein-metal emplacement at relatively low pressure-temperature conditions in a volcanic environment.

WORK DONE:

During 1974, most of the underground work was concentrated on exploring and developing the Warman zone on the 3450 level and included 1,150 feet of drifting, 250 feet of crosscutting, and 570 feet of raising. Eight diamond-drill holes totalling 172 feet were drilled on this level. A total of 10,337 tons of development ore was produced.

A test shipment of 96 tons of ore was made to the Trail smelter. A second test shipment of 45 tons of development ore taken from the eastern portion of the Warman vein was made to the Tacoma smelter.

On the 3700 level of the Manifold zone, 190 feet of raising was driven. On the 3250 level, a crosscut was advanced for 25 feet. Surface diamond drilling consisted of 17 diamond-drill holes totalling 6,900 feet.

The complete concentrator plant of the former King Resources Ltd.'s mine near Revelstoke, plus equipment and the inventory of the warehouse, were purchased in June. The plant was dismantled and shipped to a warehouse in Vancouver for overhauling.

The development work was completed by the end of August. Efforts were then made to improve the existing roads, build new roads, and clear areas in preparation for the construction of a new campsite, mill, and main haulage level at 3,250 elevation. To eliminate the problems of starting construction during the heavy snowfall, the operations were suspended at the beginning of December. It is planned that operations will resume and construction will begin in mid-1975.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 245.

STAR (Fig. C, No. 43)

LOCATION: Lat. 50° 08′ Long. 123° 10′ (92J/3E)
VANCOUVER M.D. Seven miles north-northwest of Brandywine Falls, at approximately 4,000 feet elevation.

CLAIMS: STAR 1 to 14, 21 to 30, 34 to 37.

OWNER: ENVOY RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.

DESCRIPTION: The claims are underlain by volcanic rocks and granodiorite and quartz diorite of the Coast Plutonic Complex.

WORK DONE: Geochemical silt survey, 24 samples.

IT, HIT (Fig. C, No. 28)

LOCATION: Lat. 50° 09′ Long. 123° 08′ (92J/3E)
VANCOUVER M.D. Seven miles west-northwest of Alta Lake, at approximately 3,000 feet elevation.

CLAIMS: IT 36 to 46, IT 51 to 54 Fractions, HIT 1 to 18, 1st HIT Fraction, 2nd HIT Fraction, GAP 1 and 2, GAP Fraction, MISS Fraction.

OWNER: ABACA RESOURCE INDUSTRIES INC., 728, 510 West Hastings Street, Vancouver.

DESCRIPTION: A contact between granodiorite and argillites occurs near the southern boundary of the property.

WORK DONE: VLF EM survey, 20 line-miles and geochemical soil survey, 262 samples taken at 100 by 400-foot grid spacing covering IT 36, 38, 40-46, IT 51-54 Fractions, Hit 1-18, 1st Hit Fraction, and 2nd Hit Fraction.

REFERENCES: Assessment Reports 5096, 5280.

TMC (92J-116) (Fig. C, No. 29)

LOCATION: Lat. 50° 10′ Long. 123° 07′ (92J/3E)
VANCOUVER M.D. Three and one-half miles west-southwest of Rainbow Mountain, on Callaghan Creek.

CLAIMS: TMC 1 to 22.

OWNER: T. Dyakowski.

OPERATOR: GIANT VENTURES DEVELOPMENT COMPANY LTD., 1472 Charlotte Road, North Vancouver.

METALS: Copper, silver, zinc.

DESCRIPTION: The claims are underlain by andesite and minor quartz diorite. Some copper, silver, and zinc mineralization occurs in small fractures on TMC 1 claim.

(92J/7W)

WORK DONE: Prospecting of 16 claims; geochemical survey, 183 soil samples and 30 rock samples taken at random points on the claims covering TMC 1-10 and 17-22.

REFERENCE: Assessment Report 5225.

COPPER QUEEN, OWL (92J-48, 54, 55) (Fig. C, No. 31)

LOCATION: Lat. 50° 24′ Long. 122° 47′ (92J/7W)
LILLOOET M.D. On Owl Creek, 6 miles north of Pemberton, between 2,500 and 3,700 feet elevation.

CLAIMS: OWL 1 to 8, OC 1 to 6, 43 to 48, KB 1 to 14, OL 1 to 22, OLS 1 to 30, BO 1 to 7, 9, 11, 12, OCS 15 to 26, OLN 1 to 24, MAR 1 to 22.

OWNERS: J. Scott and L. Harrison.

OPERATOR: UTAH MINES LTD., 1600, 1050 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain mainly by volcanic rocks of the Pioneer Formation, consisting of andesite tuff and lapilli tuff, lesser volcanic breccia, and minor flows. A tongue of quartz diorite extends into the area from the southwest, toward the outlet of Owl Lake. Several small plugs of diorite intrude the andesite northeast of Owl Lake. Traces of chalcopyrite and molybdenite occur in altered areas north and south of Owl Lake.

WORK DONE: 1973 – surface geological mapping, 1 inch equals 100 feet; linecutting and IP survey, 19.6 line-miles; magnetometer survey, 7 line-miles; VLF-EM survey, 1.7 line-miles; seismic survey, 100 feet; geochemical soil survey, 520 samples taken at 200 by 500-foot grid spacing covering BO 1, 3, 5, 7, 9, OL 5-18, OLN 1, and OLS 11-24; 1974 – surface geological mapping, 1 inch equals 200 feet covering OLS 11-30, OL 7-22, BO 1, 3, 5, 7, 11, and Mar 1-12; time-domain IP survey, 13.28 line-miles, 500-foot grid spacing covering OL 17-22, OLS 23-30, and Mar 1-12; ground magnetometer survey, 22.7 line-miles, 500-foot grid spacing covering OLS 11-30, OL 7-22, BO 1, 3, 5, 7, 11, and Mar 1-12; geochemical soil survey, 425 samples, 500-foot grid spacing, 16.1 line-miles covering OL 17-22, OLS 23-30, and Mar 1-12; surface diamond drilling, four holes totalling 1,800 feet on OLS 23 and Mar 2, 5; linecutting, 16.5 miles of grid on OL 17-22, OLS 23-30, BO 11, and Mar 1-12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 249; Assessment Reports 599, 2106, 4623, 4958, 5292.

CHIP, PEM (Fig. C, No. 102)

LOCATION: Lat. 50° 36′ Long. 123° 02′ (92J/11E)
LILLOOET M.D. Four miles south of the Hurley River, southeast slope of Chipmunk Mountain, along the east side of Donelly Creek, at approximately 5,000 feet elevation.

(92J/11W)

CLAIMS: CHIP 1 to 18, PEM 1 to 14, 27 to 30.

OWNER: CALTOR SYNDICATE, 1011, 2200 Yonge Street, Toronto, Ont.

DESCRIPTION: Upper Paleozoic volcanic rocks are in contact with intrusions of the Coast Plutonic Complex.

WORK DONE: Electromagnetic survey, 4 line-miles covering Chip 10-15.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 250.

FALL (92J-94) (Fig. C, No. 44)

LOCATION: Lat. 50° 40′ Long. 123° 29′ (92J/11W)
LILLOOET M.D. South of junction of Salal Creek and Lillooet River.

CLAIMS: FALL 1 to 16, 23 to 26, 33 to 40, VENT 1 to 4, 17, 19, 25 to 30.

OWNER: Silver Standard Mines Ltd.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver V6B 3T5.

METAL: Molybdenum.

DESCRIPTION: Miocene quartz monzonite, alaskite, and grey hornblende feldspar porphyry contain disseminated pyrite and molybdenite in fractures.

WORK DONE: Surface diamond drilling, two BQ holes totalling 1,836 feet on Fall 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 251; Assessment Report 5216.

BRALORNE MINE (92J-1 to 4, 7, 9, 17, 18) (Fig. C, No. 49)

By E. Sadar

LOCATION: Lat. 50° 46′ Long. 122° 48′ (92J/15W)
LILLOOET M.D. Approximately 5 miles south of Gold Bridge, on Cadwallader Creek, at approximately 3,400 feet elevation.

CLAIMS: The company holds 133 Crown-granted mineral claims. The main workings underlie IDA MAY (Lot 457), BLACKBIRD (Lot 1176), HIRAM (Lot 581), LORNE (Lot 588), GOLDEN KING (Lot 587), LITTLE JOE (Lot 539), PIONEER (Lot 456), and COUNTLESS (Lot 1177). The Crown shaft is on the Blackbird claim.

OWNER: BRALORNE RESOURCES LIMITED, 2910, 205 Fifth Avenue SW., Calgary, Alta. T2P 2W4; mine office, Bralorne.

METALS: Gold, minor silver.

DESCRIPTION: Gold-bearing quartz veins include the following minerals in small quantities: arsenopyrite, pyrite, chalcopyrite, galena, sphalerite, stibnite, tetrahedrite, scheelite, marcasite, and gold telluride. Lenticular, northerly dipping quartz veins are partly contained within, but are also found outside of, augite diorite of the Bralorne intrusive suite. This suite of rocks intrudes the folded and faulted Fergusson Group cherts and basalts, Hurley Formation clastic rocks, and Noel Formation argillites.

WORK DONE: Since production ceased and the mine was dismantled in 1971, work has been confined to underground exploration. This has included rehabilitation of old workings, underground geological mapping, 1,500 feet of diamond drilling, and 3,760 feet of drifting. Up to 35 persons were employed in 1974.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1958, pp. 15-20; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 251.

WINCHESTER, COSMOPOLITAN (Fig. C, No. 46)

LOCATION: Lat. 50° 47′ Long. 122° 47′ (92J/15W)
LILLOOET M.D. Immediately north of King adit of Bralorne mine, extending north to Mead Lake, at approximately 4,000 feet elevation.

CLAIMS: Twenty-one Crown-granted claims including WINCHESTER (Lot 5465), POLAND (Lot 5485), STAR FR. (Lot 5924), SAVAGE (Lot 5464), VIRGINIA (Lot 5455), NOELTON FR. (Lot 5456).

OWNER: Inter-Tech Resources Ltd.

OPERATOR: LOVE OIL CO., 7330 Shoeman Lane, Scottsdale, Arizona.

METAL: Gold.

DESCRIPTION: Augite diorites and 'soda granite' of the Bralorne intrusive suite intrude Fergusson Group cherts and basalts and Hurley Formation clastic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims; magnetometer survey, 100 by 400-foot grid spacing covering all claims; EM-16 survey, 400-foot grid spacing covering most claims; EM and seismic surveys, variable grid spacing covering selected areas; geochemical surveys, 753 soil samples and 653 biogeochemical samples taken at 200 by 400-foot grid spacing covering all claims and 217 soil samples taken at 100 by 300-foot grid spacing covering selected line; surface diamond drilling, six BX holes totalling 2,248.5 feet (three on Lot 5456, two on Lot 5465, and one on Lot 5221); road construction, two-thirds of a mile on Lots 5925 and 5464; trenching, 3,300 feet on Lots 5456, 5465, 5485, 5924, 5464, and 5455.

REFERENCES: *Geol. Surv., Canada,* Mem. 130 and 213.

WAYSIDE (92J-30) (Fig. C, No. 47)

LOCATION: Lat. 50° 53′ Long. 122° 50′ (92J/15W)
LILLOOET M.D. One and one-half miles northerly from Gold Bridge, at approximately 2,200 feet elevation.

CLAIMS: WAYSIDE, ARGON, RADIUM, HELIUM, QUEEN CITY FR. (Lots 3036 to 3049), RODEO (Lot 5471), COMMODORE FR., LODGE, ALPHA, BETA, GAMMA, CABINET, COUNSEL, NEWPORT, WAYSIDE B FR., CAMP DENISON, PORT FR., SUN (Lots 5503 to 5515), CITY NO. 1, SPRING A, SPRING FR., SPRING B, SPRING C, LODGE B, RODEO FR. (Lots 5912 to 5918), WAYSIDE NO. 2, LODGE NO. 2 FR. (Lots 6955, 6956).

OWNER: DAWSON RANGE MINES LTD., Box 466, Lillooet.

METAL: Gold.

(92J/15W)

DESCRIPTION: The Wayside property is underlain by cherts, argillites, greenstones, and tuffs of the Fergusson Group and by differentiated augite diorites of the Bralorne intrusive suite. The sedimentary and volcanic rocks are faulted, deformed, and moderately metamorphosed near the diorite, which has also been faulted. Faults in the diorite are filled by quartz-albite-carbonate veins which in places carry economic quantities of gold along with base metals.

WORK DONE: Some rock sampling; 110 soil samples taken at 100-foot grid spacing; magnetometer surveying; approximately 200 feet of drilling in four X-ray holes.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 283.

GOLDEN (92J-118) (Fig. C, No. 48)

LOCATION: Lat. 50° 54' Long. 122° 46' (92J/15W)
LILLOOET M.D. North of the Lillooet-Gold Bridge Highway, about 1 mile east of the Gun Creek bridge, at approximately 3,000 feet elevation.

CLAIMS: HELM, GOLDEN 1 to 3 Fractions.

OWNER: EMPIRE METALS CORPORATION LTD., 5th Floor, 134 Abbott Street, Vancouver V6B 2K4.

METALS: Gold, silver, antimony.

DESCRIPTION: Steeply inclined volcanic rocks and cherts of the Fergusson Group host the known veins. Feldspar porphyry and several serpentinized ultrabasic dykes were noted to the west. Lenticular masses of stibnite and minor pyrite occur within a series of north-trending quartz veins. A sample of this material assayed: gold, 0.470 ounce per ton; silver, 1.51 ounces per ton; and antimony, 3.32 per cent.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering Golden 1 and 2 Fractions; geochemical soil survey, 26 samples taken on two lines in the north part of the area.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1933, p. 269; Assessment Report 5364.

PEERLESS (92J-115) (Fig. C, No. 45)

LOCATION: Lat. 50° 56' Long. 122° 47' (92J/15W)
LILLOOET M.D. At the south end of Tyaughton Lake, 9 miles north of Bralorne, at approximately 3,000 feet elevation.

CLAIMS: ZINC 1 to 6.

OWNER: THUNDER CREEK MINES LTD., Box 466, Lillooet.

METALS: Silver, zinc, gold.

DESCRIPTION: A fissure vein extends northeast through andesite, argillite, and chert of the Fergusson Group. The vein consists of quartz, calcite, and ankerite and contains streaks and bunches of pyrite and sphalerite.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering Zinc 1-3.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1937, pp. F11, F12; Assessment Report 5325.

BUTE INLET 92K

OK (92K-8) (Fig. C, No. 32)

By J. W. Robinson and K. E. Northcote

LOCATION: Lat. 50° 03′ Long. 124° 40′ (92K/2E; 92F/15E)
VANCOUVER M.D. Twelve miles north-northwest of Powell River, between 2,800 and 3,200 feet elevation.

CLAIMS: OK 1 to 60, 63, 65, 67, 69 to 74, IN 1 to 16, 149 to 156, 161 to 164, 180 to 184, INLET 1 to 16 Fractions, KYDIDLE 1 and 2, MBM 1 to 6, DEE 1 to 109, 111 to 114, 116 to 140, 143 to 198, 203 to 226.

OWNERS: Robert Mickle, Mary Boylan, and Granite Mountain Mines Ltd.

OPERATOR: WESTERN MINES LIMITED, 1103, 595 Burrard Street, Vancouver; field office, Box 8000, Campbell River.

METALS: Copper, molybdenum.

DESCRIPTION:

The claims are underlain by diorite-gabbro of the Coast Plutonic Complex which has been intruded by an elongated, elliptical, northerly trending body of granodiorite with a quartz monzonite core. The granodiorite measures about 5 miles (8 kilometres) by 2 miles (3 kilometres) with the quartz monzonite core about 2 miles (3 kilometres) long and averaging less than 2,000 feet (610 metres) in width. The age of the granodiorite and quartz monzonite is probably Cretaceous or younger. A swarm of northerly trending vertical to steep-dipping dacite, andesite, and diorite dykes parallel the structural trend of the granodiorite-quartz monzonite bodies.

Mineralization consists mainly of chalcopyrite and molybdenite plus minor bornite and sphalerite. Sporadic occurrences of magnetite have been noted. Some limonite, malachite, and a little azurite are present near the surface and deeper in fault zones. Chalcopyrite is most common as disseminations and in fractures in altered granodiorite peripheral to the quartz monzonite core. It also occurs as blebs or coatings in and along the margins of quartz veinlets. Pyrite is found throughout the granodiorite, in some places in the dykes, and is sparsely disseminated in quartz monzonite. Molybdenite is sparsely and erratically distributed through granodiorite, most commonly on fracture surfaces.

The mineral zonation pattern, best observed in the North Lake area, consists of a discontinuous, irregular band of chalcopyrite in intensely fractured, altered granodiorite peripheral to the quartz monzonite core. Alteration in granodiorite consists of K-feldspar, sericite, quartz, and chlorite. A similar zonation pattern has also been noted south of Lizard Lake.

WORK DONE: Surface diamond drilling, 22 holes totalling 12,695 feet on OK 3, 14, 16, 29, 37, 43, and 45; road construction, approximately 5 miles on same claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 284; Assessment Report 5026.

COPPER BELL, BIT (92K-71, 72, 73, 103, 119) (Fig. C, No. 33)

LOCATION: Lat. 50° 07′ Long. 125° 16′ (92K/3W)
NANAIMO M.D. Quadra Island, north of Gowland Harbour, at approximately 500 feet elevation.

(92K/3W)

CLAIMS: COPPER BELL 1 to 6, COPPER CLIFF, EVELYN 1 to 3, BEAVER DAM 1 and 2, BIT 1 and 2, COPPER HILL 1 and 2, COLLEEN 1 and 2, CLIFF 1 and 2, GAMMA, DELTA Fraction, EPSILON Fraction, ZETA Fraction, KAPPA Fraction, BOBCAT 1 to 6.

OWNER: Quadra Mining Co. Ltd.

OPERATORS: QUADRA MINING CO. LTD., 1161 South Murphy Street, Campbell River V9W 1Z8 and ARODIEN RESOURCES LTD. (formerly Prince Stewart Mines Limited), 307, 475 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by amygdaloidal and massive Karmutsen basalt which is locally intensely fractured. Chalcocite and lesser bornite, some chalcopyrite, and traces of native copper occur in amygdules, as disseminations in the groundmass, and in fractures. Locally there is a concentration of mineralization in shaly and silty interbeds between flows. On the Copper Bell claims chalcocite and lesser bornite are associated with quartz-filled crossfractures.

WORK DONE: 1973 – Arodien Resources Ltd. – surface diamond drilling, one BQ hole totalling 107 feet on Bit 1; 1974 – Quadra Mining Co. Ltd. – trenching, 60 feet on Bit 1; trenching, 28 cubic yards and stripping, 20 by 30 feet on Copper Bell 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 280; Assessment Report 5076.

COPPER ROAD (92K-60) (Fig. C, No. 34)

LOCATION: Lat. 50° 12′ Long. 125° 18′ (92K/3W)
NANAIMO M.D. One and one-half miles northeast of Deepwater Bay, west side of Quadra Island, at approximately 1,100 feet elevation.

CLAIMS: COPPER ROAD 1, 2, 5 to 8, 39, 40, 43, 103, 104, RIB 1, 2, 15, 20 to 22, RIB 16 Fraction, VIN 1 Fraction.

OWNERS: Eugene Adams, Blanche Adams, and Antoinette Adams.

OPERATOR: UNIVEX MINING CORP. LTD., 215, 744 West Hastings Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: The claims are underlain by Karmutsen basalt which is in part amygdaloidal and in places is sheared and brecciated. Bornite, chalcopyrite, and chalcocite occur in a shear zone which strikes east-west and dips 80 degrees south.

WORK DONE: Lay-out map prepared for future underground mining.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 253.

VICTORIOUS (Fig. C, No. 35)

LOCATION: Lat. 50° 27′ Long. 125° 18′ (92K/6W)
VANCOUVER M.D. On Frederick Arm, 1.5 miles north-northeast of Owen Point.

CLAIM: VICTORIOUS 1.

(92K/11W)

OWNER: P. BUCKLAND, 3166 Point Grey Road, Vancouver.
WORK DONE: 1973 – prospecting.
REFERENCE: Assessment Report 4949.

ACE (92K-93) (Fig. C, No. 36)

LOCATION: Lat. 50° 33′ Long. 125° 25′ (92K/11W)
VANCOUVER M.D. Between Loughborough Inlet and Phillips Arm, near the southerly flowing headwaters of Gray Creek, between 1,000 and 2,000 feet elevation.
CLAIMS: ACE 1, 3, 5 to 8.
OWNER: JAMES DAVIS, Box 826, Nanaimo.
METAL: Molybdenum.
DESCRIPTION: A pendant of limestone, quartzite, and propylitic greenstone is located in the upper part of Gray Creek. Altered quartz diorite, fresh quartz diorite, and pyritized diorite are exposed successively to the northeast. Molybdenite occurs in quartz veinlets in the diorite.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 104 samples taken at 100 by 400-foot grid spacing covering all claims.
REFERENCE: Assessment Report 5173.

ALERT BAY 92L

BEANO, FRIEND (92E-2, 3) (Fig. C, No. 7)

LOCATION: Lat. 49° 59.9′ Long. 126° 49′ (92E/15W; 92L/2W)
Report on this property in section 92E/15W.

TV (Fig. C, No. 50)

LOCATION: Lat. 50° 01′ Long. 127° 07′ (92L/3E)
ALBERNI M.D. One and three-quarter miles southwest of the head of Amai Inlet, between 500 and 600 feet elevation.
CLAIMS: TV 1 to 4.
OWNER: G. O'Brien.
OPERATOR: LION MINES LTD., 821, 602 West Hastings Street, Vancouver.
DESCRIPTION: A quartz fissure vein occurs in granite and granodiorite near a diabase dyke.
WORK DONE: Minor underground sampling.

CU (92L-263) (Fig. C, No. 51)

LOCATION: Lat. 50° 11' Long. 127° 10' (92L/3E)
ALBERNI M.D. Three miles northwest of Tahsish Inlet, between 550 and 3,200 feet elevation.

CLAIMS: CU 1 to 10.

OWNERS: S. Craig and Moneta Porcupine Mines Limited.

OPERATORS: MONETA PORCUPINE MINES LIMITED, 717, 402 West Pender Street, Vancouver and CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Bonanza andesite flows and pyroclastic rocks are intruded by a small stock of diorite and granodiorite, which in turn is intruded by a dyke of feldspar porphyry. The dyke is closely fractured, and the stock less so. Chalcopyrite and bornite coat these fractures, and chalcopyrite and pyrite are finely disseminated through porphyry, granodiorite, and a hornfels contact zone of the andesite. Molybdenite-bearing quartz veinlets are widely spaced through the diorite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 120 samples taken at random on a 100 by 200-foot grid covering CU 1-10.

REFERENCE: Assessment Report 5193.

KUQ (92L-264) (Fig. C, No. 52)

LOCATION: Lat. 50° 12' Long. 127° 11' (92L/3E)
ALBERNI M.D. On the east side of a small unnamed lake, 5 miles from the point where the Kwois Creek drains into Tahsish Inlet, between 3,000 and 3,700 feet elevation.

CLAIMS: KUQ 1 to 10.

OWNER: Texada Mines Ltd.

OPERATOR: TEXADA MINES LTD. and KAISER EXPLORATION AND MINING COMPANY, Box 10, Gillies Bay V0N 1W0.

METAL: Copper.

DESCRIPTION: A limestone bed striking northwest and dipping 30 degrees west is altered to garnet skarn marginal to a quartz diorite intrusion. Alteration and minor disseminated chalcopyrite mineralization is found over a 2,000-foot strike length in association with flat faults and fractures.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet and 1 inch equals 400 feet covering all claims.

LITTLE LAKE (92L-3) (Fig. C, No. 53)

LOCATION: Lat. 50° 14' Long. 127° 27' (92L/3W)
ALBERNI M.D. Four miles northwest of the head of Ououkinsh Inlet, at the headwaters of Power and Ououkinsh Rivers, at approximately 3,000 feet elevation.

(92L/5E)

CLAIMS: LIT 1 to 56.

OWNER: Texada Mines Ltd.

OPERATORS: TEXADA MINES LTD. and KAISER EXPLORATION AND MINING COMPANY, Box 10, Gillies Bay V0N 1W0.

METAL: Iron.

DESCRIPTION: The area mapped covers the southwest part of the more northerly of two ridges between Power and Ououkinsh Rivers. A large tongue and satellitic dykes of diorite intrude an assemblage of metavolcanic and sedimentary rocks. A discontinuous zone of magnetite slabs extends northwest along the ridge crest, where it flanks the diorite tongue on the northeast, and continues down toward the elbow of Power River. The magnetite massively replaces basalt flows, andesite, and metasedimentary rocks in or near fault zones. Only minor skarn was noted, consisting of pyroxene, chlorite, and less epidote; garnet is absent. The magnetite contains an estimated 2.5 per cent pyrite.

WORK DONE: Linecutting and magnetometer survey, 6 line-miles; topographic mapping of 6 square miles at 1 inch equals 400 feet; surface geological mapping of approximately 1 square mile at 1 inch equals 200 feet and of 85 acres at 1 inch equals 50 feet; 4 miles of trail constructed; excavation of 35 trenches aggregating 756 lineal feet and 5,310 cubic feet covering most of the claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1961, p. 100; Assessment Report 5375.

HEART (92L-1) (Fig. C, No. 55)

LOCATION: Lat. 50° 17' Long. 127° 32' (92L/5E)
ALBERNI M.D. Headwaters of Nasparti and Power River, at approximately 1,600 feet elevation.

CLAIMS: COL 1 to 18, 23 to 27.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs in sheared and fractured zones in Bonanza volcanic rocks intruded by a small body of granodiorite and diorite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 5 line-miles, 500-foot grid spacing; geochemical soil survey, 421 samples, 500-foot grid spacing, 5 line-miles covering all claims.

FANG (92L-265) (Fig. C, No. 54)

LOCATION: Lat. 50° 18' Long. 127° 33' (92L/5E)
NANAIMO M.D. About 9 miles southwest of Port Alice, on the south fork of the Klaskish River, near the headwaters, at approximately 1,500 feet elevation.

(92L/5E)

CLAIMS: FANG 1 to 9, 11 to 14, FANG 10 Fraction.

OWNER: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METAL: Copper.

DESCRIPTION: Bonanza volcanic rocks underlie most of the claims, and are separated from a complex pluton by a fault trending northwest near the location line of Fang 3 and 4 and extending down the Klaskish River valley. On Fang 1 and 2 the volcanic rocks are intensively fractured and silicified and contain 1 to 2 per cent finely disseminated pyrite. Chalcopyrite and pyrite occur in fractures striking 300 to 325 degrees.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims; linecutting and magnetometer survey, 2.6 line-miles, 200 by 100-foot grid spacing covering Fang 1-4, 8, 9; frequency-domain IP survey, 2.6 line-miles, 200 by 100-foot grid spacing covering Fang 1-4, 8, 9; surface diamond drilling, one BQ hole totalling 506 feet on Fang 1; topography mapped.

REFERENCES: Assessment Report 5128, 5129, 5335.

MEXICAN, SINKER (92L-144, 237) (Fig. C, No. 57)

LOCATION: Lat. 50° 18' Long. 127° 44' (92L/5E)
NANAIMO M.D. On the north side of the east end of Klaskino Inlet, at approximately 900 feet elevation.

CLAIMS: KLASKINO 1 to 15, 17, 18, 21 to 42, KLASKINO 16, 19, 20 Fractions.

OWNER: British Newfoundland Exploration Limited.

OPERATOR: STOKES ENGINEERING AND MANAGEMENT COMPANY, 713, 744 West Hastings Street, Vancouver.

METALS: Copper, molybdenum, cobalt.

DESCRIPTION: Skarn is associated with sedimentary rocks of the Parson Bay and Quatsino Formations.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; surface diamond drilling, six holes totalling 1,141 feet on Klaskino 18, 22, 34.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 257.

TENT (92L-266) (Fig. C, No. 56)

LOCATION: Lat. 50° 19' Long. 127° 36' (92L/5E)
NANAIMO M.D. About 9 miles southwest of Port Alice, straddling the north branch of the upper Klaskish River, between 1,000 and 1,400 feet elevation.

CLAIMS: TENT 1 to 28, 36, 38, 68, 114, 116, 118, 119, TENT 29 Fraction.

OWNERS: P. Gottselig and Vanco Explorations Limited.

OPERATORS: VANCO EXPLORATIONS LIMITED, Box 221, Commerce Court East, Toronto, Ont. and IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

(92L/6W)

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite mineralization is present as disseminations and fracture fillings in silicified and clay altered porphyritic quartz diorite.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims; surface diamond drilling, two IEX holes totalling 416 feet on Tent 1 and 18 and three BQ holes totalling 1,216 feet on Tent 4, 16, 17.

REFERENCES: Assessment Reports 4989, 5334.

VICTORIA LAKE (Fig. C, No. 58)

LOCATION: Lat. 50° 20′ Long. 127° 22′ (92L/6W)
NANAIMO M.D. Approximately 12 miles southeast of Port Alice, on the western side of Victoria Lake.

CLAIMS: VICTORIA LAKE 9 to 56, ELSE 1 to 10.

OWNER: GEOR MINE & OIL LTD., 3856 Winlake Crescent, Burnaby.

DESCRIPTION: Bonanza andesite and basalt contain minor chalcopyrite and bornite in fractures.

WORK DONE: 1973 and 1974 – airborne magnetometer and electromagnetic survey, 100 line-miles; ground magnetometer and VLF EM survey, 6 line-miles; geochemical soil survey, 88 samples taken at 500-foot intervals on a reconnaissance grid; surface geological mapping, 1 inch equals 800 feet covering the central half of the Victoria Lake claims; 1974 – reconnaissance surface geological mapping, 1 inch equals 500 feet; ground magnetometer and VLF EM survey, 1.6 line-miles; geochemical soil survey, 26 samples taken along reconnaissance lines covering Victoria Lake 51-56; surface geological mapping, 1 inch equals 1,000 feet; airborne magnetometer and electromagnetic survey, 13 line-miles; ground magnetometer and electromagnetic survey, 5 line-miles; geochemical soil survey, 54 samples taken at 500-foot intervals along isolated lines covering Else 1-10 and Victoria Lake 9, 10, 21, 22.

REFERENCES: Assessment Reports 4901, 4981, 5276.

HAB, BOB (92L-134, 164, 254, 255) (Fig. C, No. 59)

LOCATION: Lat. 50° 19′ Long. 126° 44′ (92L/7)
NANAIMO M.D. Seventeen miles south from Beaver Cove, immediately south of the south end of Bonanza Lake, between 900 and 2,000 feet elevation.

CLAIMS: HAB 1 to 44, BOB 1 to 13, 15, 17 to 24, 26, 28 to 31, 33, BOB 16 and 27 Fractions.

OWNERS: Imperial Oil Limited and R. McIver.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, iron.

(92L/8E)

DESCRIPTION: Pyrite, magnetite, and chalcopyrite mineralization occurs in garnet-epidote skarn zones which are associated with Karmutsen basalt, interlava limestone, and a Jurassic granodiorite stock.

WORK DONE: 1973 and 1974 – surface geological mapping, 1 inch equals 400 feet; selected areas at 1 inch equals 50 feet and 1 inch equals 25 feet; geochemical soil survey, 644 samples taken at 100 by 400-foot grid spacing; magnetometer and horizontal-loop EM survey, 32 line-miles covering most of Hab claims plus Bob 1-13, 15-24, 26, 30, 31, 33; 1974 – surface diamond drilling, five holes totalling 912 feet on Bob 3 and 11.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 258; Assessment Report 4898.

I (92L-252) (Fig. C, No. 60)

LOCATION: Lat. 50° 29′ Long. 126° 06′ (92L/8E)
VANCOUVER M.D. One mile west of Port Neville.

CLAIMS: I 1 and 2, PORT 3 to 22, STAN 1 to 3, H&B 1 to 6.

OWNER: STANLEY WESTON, 1850 Southwest Marine Drive, Vancouver V6P 6B2.

METAL: Copper.

DESCRIPTION: Fractures and epidote-filled amygdules in Karmutsen basalt contain chalcopyrite and bornite.

WORK DONE: Induced polarization survey, one-quarter mile, 200-foot grid spacing and surface diamond drilling, two holes, one 25 feet and one 124 feet on I 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 260; Assessment Report 4929.

ISLAND COPPER MINE (92L-158) (Fig. C, No. 63)

By W. C. Robinson

LOCATION: Lat. 50° 36′ Long. 127° 28.3′ (92L/11W, 12E)
NANAIMO M.D. Five miles east of Coal Harbour, on the north side of Rupert Inlet, between sea-level and 300 feet elevation.

CLAIMS: Mineral Leases M-31 to M-37 including BAY, COVE, JIM, INLET, COIR, RUPERT, and ART, totalling approximately 175.

OWNER: UTAH MINES LTD., Box 370, Port Hardy.

METALS: Copper, molybdenum (production shown on Table 6).

DESCRIPTION: Copper and molybdenum mineralization occurs as disseminations and in veinlets in siliceous and hydrothermally altered tuff, lapilli tuff, and tuff breccia of the lower part of the Bonanza Subgroup.

WORK DONE:

In addition to ore that was trucked directly to the nearby concentrator, 22,449,000 tons of waste material and 500,000 tons of overburden were removed from the pit during the year. A portion of the waste material was placed on land adjacent to the pit and the remainder was deposited into Rupert Inlet. Mining at this operation is done with benches placed at 40-foot intervals. At year-end the lowest elevation in the pit was 160 feet below sea level. Equipment in the pit consists of twenty-five 120-ton Unit Rig M-120 trucks, five 170-ton Unit Rig M-170 trucks, five 15-cubic-yard P&H electric shovels, one 6½-cubic-yard Marion electric shovel, three 60-R Bucyrus-Erie rotary drills, and one 45-R Bucyrus-Erie rotary drill. During 1974 construction of a dust collection system in the screening tower was completed. Other work included the construction of a second tailings line from the thickeners to the beach and the replacement of the underwater portion of the tailings outfall system. Tailings from the concentrator are discharged directly into Rupert Inlet although an emergency tailings impoundment, capable of storing a quantity of tailings that could be produced in a six-month period, is available. At year-end 745 persons were employed.

The following three reports detail drilling carried out by Utah Mines Ltd. on their surrounding claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 293-298; 1973, p. 260; Cargill, D. G., Ph.D. Thesis, *UBC*, March, 1975.

RUPERT (Fig. C, No. 62)

LOCATION: Lat. 50° 36′ Long. 127° 25′ (92L/11W)
NANAIMO M.D. Approximately 10 miles south of Port Hardy, immediately east of the head of Rupert Inlet, adjoining the Island Copper mine production leases.
CLAIMS: RUPERT 1 to 30.
OWNERS: Utah Mines Ltd. and Gordon Milbourne.
OPERATOR: UTAH MINES LTD., Box 370, Port Hardy.
DESCRIPTION: Fragmental andesites, cut by quartz porphyry dykes, are locally silicified and contain disseminated pyrite.
WORK DONE: Surface diamond drilling, five BQ holes totalling 2,914 feet on Rupert 23, 25, and 28.
REFERENCE: Assessment Report 5102.

KEN, F (Fig. C, No. 61)

LOCATION: Lat. 50° 37′ Long. 127° 27′ (92L/11W)
NANAIMO M.D. North of Rupert Inlet, 2 miles northeast of the Island Copper mine.
CLAIMS: BIM, BEE, SPAM, KEN, F, CAR, EXPO, totalling approximately 60.
OWNERS: Utah Mines Ltd. and Gordon Milbourne.
OPERATOR: UTAH MINES LTD., Box 370, Port Hardy.
DESCRIPTION: Hornblende andesite, overlying Quatsino limestone, contains minor chalcopyrite in fractures and veinlets. Hole M-3 collared in Quatsino limestone, then intersected Karmutsen basalt; hole M-4 intersected argillite.
WORK DONE: Surface diamond drilling, four BQ holes totalling 2,220 feet on Ken 6, 13 and F 2, 6.
REFERENCE: Assessment Report 5033.

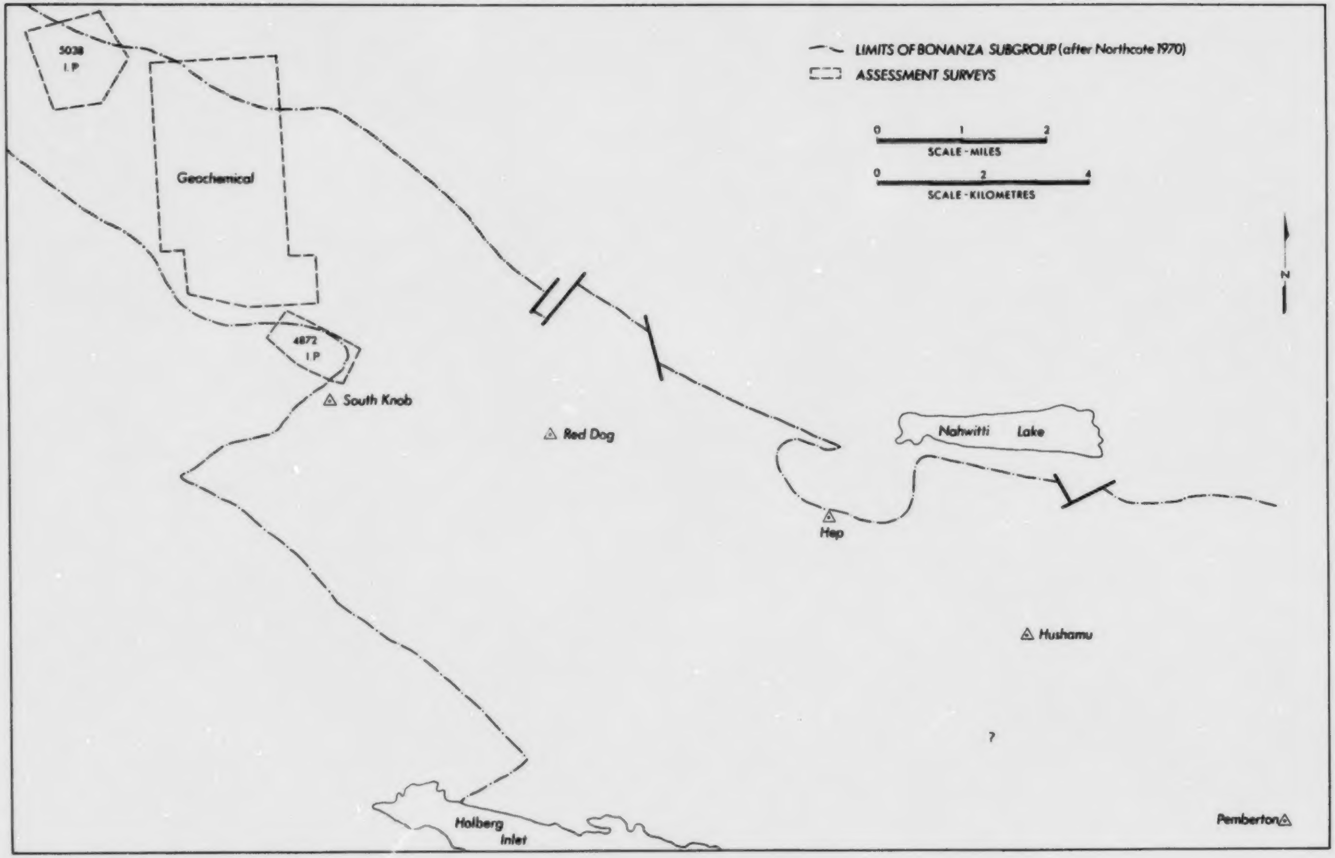

LIMITS OF BONANZA SUBGROUP (after Northcote 1970)
ASSESSMENT SURVEYS
0
1
2
SCALE - MILES
0
2
4
SCALE - KILOMETRES
N
5038
I.P
Geochemical
4872
I.P
South Knob
Red Dog
Nahwitti
Lake
Hep
Hushamu
?
Holberg
Inlet
Pemberton

Figure 29. Bonanza belt, north of Holberg Inlet, Vancouver Island.

BAY (Fig. C, No. 64)

LOCATION:	Lat. 50° 37′	Long. 127° 31′	(92L/12E)
	NANAIMO M.D. North of Rupert Inlet, adjoining immediately to the west of the Island Copper mine production leases.		
CLAIMS:	BAY, COVE, KOL, COIR, BOB, BEN.		
OWNERS:	Utah Mines Ltd. and Gordon Milbourne.		
OPERATOR:	UTAH MINES LTD., Box 370, Port Hardy.		
DESCRIPTION:	Abundant pyrite is disseminated and in fractures of partly silicified fragmental andesite of the Bonanza Subgroup.		
WORK DONE:	Surface diamond drilling, two NQ holes totalling 1,843 feet on Bay 22 and 96.		
REFERENCE:	Assessment Report 5265.		

EXPLORATION IN THE BONANZA BELT NORTH OF HOLBERG INLET

By G.E.P. Eastwood

Since Northcote's progress report was published (GEM, 1970, pp. 254-258), zones of pyrophyllite-bearing silicified breccia have been recognized as Bonanza volcanic centres (GEM, 1972, pp. 293-303). Continued exploration has resulted in the discovery of additional centres. These centres are located and named on Figure 29. An additional centre may be represented by the question mark: silicified breccia with some pyrophyllite was found at the limit of mapping. Also shown on the figure are the northeast and southwest boundaries of this Bonanza belt and the outlines of three assessment surveys.

In 1974, Utah Mines Ltd. extended 200-foot to the inch geological mapping and a magnetometer survey around the South Knob centre and southwest of the Hushamu centre. An IP survey was conducted on grid lines between the South Knob centre and the Red Dog property and between that property and the Hep centre, and also along selected logging roads near the grids. A short seismic survey was done on the easterly IP grid and two holes, totalling 791 feet, were diamond drilled.

Pechiney Development Ltd. followed up a 1973 IP survey of the north side of the South Knob centre with 3,377 feet of diamond drilling of two anomalies in eight holes, but reported no mineralization. Chevron Standard Limited conducted an extensive geochemical survey over the summit area and south slope of Knob Hill, using both standard soil sampling techniques and drilling to sample the base of the till layer. Cities Service Minerals Corporation conducted an IP survey over the northwest slope of Knob Hill.

A major effort by Utah Mines Ltd. was directed to the Hushamu showing. Hushamu Mountain is a rugged, gossaned peak carved from pyritic silicified breccia from the core of a volcanic centre. Previous mapping, drilling, and sampling of the core disclosed only pyrite, but indicated chalcopyrite along the northeast margin. This marginal zone underlies a heavily timbered valley occupied by Hushamu Lake and a tributary of Hepler Creek. The centre of this zone is plotted on Figure 29. In 1974 it was explored and tested by 19 diamond-drill holes totalling 12,745 feet.

EXPO (HOLBERG INLET) (92L-88, 131, 240) (Fig. C, No. 67) By G.E.P. Eastwood

LOCATION: Lat. 50° 39′ Long. 127° 50′ (92L/12)
NANAIMO M.D. Fifteen to 21 miles west and southwest of Port Hardy, between 1,000 and 1,500 feet elevation.

CLAIMS: EXPO, HEP, DON, WON, T, MOE, totalling 848.

OWNER: UTAH MINES LTD., 1600, 1050 West Pender Street, Vancouver V6E 3S7.

METALS: Copper, molybdenum.

DESCRIPTION: Previous mapping was extended in two areas: (1) around the heads of the Goodspeed River and Clesklagh Creek and (2) west and north of Red Dog hill. Area (1) is underlain by Bonanza flows and pyroclastic rocks which are intruded by a few small diorite plugs. Siliceous breccia is exposed at the limit of mapping 1.0 mile south of Hushamu Mountain. In area (2), on the north slope of Red Dog hill, Parson Bay sedimentary rocks dip southwest under Bonanza pyroclastic rocks. On the hill to the northwest, Expo 36 and 38 are largely underlain by a mass of siliceous breccia, which contains considerable pyrite and sporadic pyrophyllite. This mass is intruded by a dyke of siliceous quartz feldspar porphyry and is truncated by a fault on the southwest. The rest of area (2) is underlain by Bonanza dominantly pyroclastic rocks.

WORK DONE: Topographic and geological mapping of 35 square miles at 1 inch equals 200 feet; 36.4 line-miles of grid and magnetometer survey; 24 line-miles of time-domain IP survey along grid lines and 13 line-miles along logging roads; 0.3 line-mile of seismic survey on Hep 93 and 100; surface diamond drilling, 23 holes totalling 14,530 feet on Expo 23, 189, 217, 237, 238, 258-261, 479, 487, 504 Fraction, Hep 59, 98, and Don 14 Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 262; Assessment Reports 3400, 3958, 4000, 4754, 5262, 5345.

BON (Fig. C, No. 65)

LOCATION: Lat. 50° 41′ Long. 127° 37′ (92L/12E)
NANAIMO M.D. North of Holberg Inlet, 2 miles southeast of Kains Lake, between 1,200 and 1,400 feet elevation.

CLAIMS: BON 1 to 4.

OWNER: J. M. BLACK, 843 Prospect Avenue, North Vancouver.

WORK DONE: Ground magnetometer survey, 2.5 line-miles, irregular grid spacing covering all claims.

FOX (Fig. C, No. 68)

LOCATION: Lat. 50° 37′ Long. 127° 56′ (92L/12W)
NANAIMO M.D. Four miles southwest of Holberg, on the south side of Holberg Inlet.

CLAIMS: FOX 1 to 20.

(92L/12W)

OWNER: HOLBERG MINES LTD., 103, 709 Dunsmuir Street, Vancouver.

DESCRIPTION: The claims are underlain by Quatsino limestone and Karmutsen volcanic rocks.

WORK DONE: Surface diamond drilling, five XRP holes totalling 490 feet on Fox 12, 13, and 14.

REFERENCE: Assessment Report 4908.

ST. CLAIRE, SUN (92L-75) (Fig. C, No. 66)

LOCATION: Lat. 50° 42′ Long. 127° 50′ (92L/12W)
NANAIMO M.D. One mile southeast of the eastern end of Nahwitti Lake, between 700 and 1,300 feet elevation.

CLAIMS: SUN 3 to 8, RAIN 1 to 4, SILVA 13 and 14, TAXI 1 and 2, ONE Fraction, TWO Fraction, MARY 1.

OWNER: GIANT EXPLORATIONS LIMITED, 900, 837 West Hastings Street, Vancouver.

METALS: Iron, copper, lead, zinc, silver.

DESCRIPTION: The property is underlain by sedimentary rocks of the Parson Bay and Quatsino Formations and volcanic rocks of the Karmutsen Formation and Bonanza Subgroup. These rocks are intruded by Island Intrusions. Magnetite, chalcopyrite, sphalerite, and silver-bearing galena occur in skarn and in siliceous replacements of limestone.

WORK DONE: Trenching, 245 feet and stripping, 800 square feet on Sun 4 and Taxi 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 261 (HPH, Dorlon).

ELK (Fig. C, No. 69)

LOCATION: Lat. 50° 45′ Long. 128° 04′ (102I/9E, 16E; 92L/13W)
Report on this property in section 102I/9E.

MOUNT WADDINGTON 92N

LANGARA, ARGO (92N-36, 38) (Fig. C, No. 117)

LOCATION: Lat. 51° 29′ Long. 124° 35′ (92N/7E)
CLINTON M.D. Approximately 7 miles northwest of the south end of Tatlayoko Lake, at approximately 5,700 feet elevation.

CLAIMS: LANGARA 1 to 7 (Lots 1163 to 1175), ARGO (Lot 1177), FEDERAL (Lot 1179), MARY (Lot 1178).

OWNER: CANEX PLACER LIMITED, 800, 1030 West Georgia Street, Vancouver.

METALS: Gold, silver, copper.

DESCRIPTION: Quartz veins and shears occur near a diorite dyke. Mineralization consists of pyrite, chalcopyrite, and arsenopyrite.

WORK DONE: Trenching, 168 feet on Langara 2.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1935, pp. F33-F35; 1937, p. F34.

VB (92N-13) (Fig. C, No. 99)

LOCATION: Lat. 51° 38′ Long. 125° 04′ (92N/11E)
CLINTON M.D. Approximately 3.5 miles northwest of the north end of Twist Lake, at approximately 7,500 feet elevation.
CLAIMS: KG 1 to 16, 18 to 40, BEAR 1 Fraction.
OWNER: CANEX PLACER LIMITED, 800, 1030 West Georgia Street, Vancouver.
METAL: Molybdenum.
DESCRIPTION: Molybdenite and pyrite occur in quartz veins and fractures.
WORK DONE: Trenching, 109 feet and underground work, 109 feet on KG 11, 15, and Bear 1 Fraction.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 325.

MOUNTAIN BOSS (92N-10) (Fig. C, No. 100)

LOCATION: Lat. 51° 48′ Long. 125° 05′ (92N/14E)
CARIBOO M.D. Northeasterly flank of Perkins Peak, at approximately 7,200 feet elevation.
CLAIMS: APEX 1 to 54, Mineral Lease M-26.
OWNER: KLEENA KLEENE GOLD MINES LTD., 105 West 6th Avenue, Vancouver.
METALS: Gold, silver, copper.
DESCRIPTION: Quartz diorite intrudes quartzite. Arsenopyrite, pyrite, magnetite, and hematite occur in quartz veins and fractures in both rock types.
WORK DONE: Surface diamond drilling, three holes totalling 700 feet on Apex 4; road construction, 5,000 feet on Apex 9.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 264; Assessment Report 5301.

TASEKO LAKES 92O

SANWES (Fig. C, No. 90)

LOCATION: Lat. 51° 03′ Long. 122° 29′ (92O/1W)
LILLOOET M.D. Yalakom River, 1 mile upstream from the confluence with Blue Creek.
CLAIM: SANWES 1.
OWNER: WESLEY JOHN PETERS, Box 1314, Salmon Arm.
WORK DONE: Prospecting of one claim.
REFERENCE: Assessment Report 4991.

MUGWUMP (92O-69) (Fig. C, No. 91)

LOCATION: Lat. 51° 04′ Long. 122° 49′ (92O/2W)
LILLOOET M.D. On Relay Creek, 1.5 miles above Tyaughton Creek, at approximately 4,500 feet elevation.

CLAIMS: MUGWUMP, MUGWUMP 2 to 4, 8, 10, MUGWUMP 4 Fraction.

OWNER: BALLINDERRY EXPLORATIONS LTD., 565, 444 Seventh Avenue SW., Calgary, Alta.

METALS: Mercury, antimony.

DESCRIPTION: The claims are underlain by a southwest-dipping sequence, consisting of andesite, dacite, limestone, and mudstone assigned by Cairns to the Fergusson Group and conglomerate and sandstone assigned by Cairns to the Taylor Group. Cinnabar and stibnite occur as disseminations and as fracture coatings and narrow veins in dacite and conglomerate, and to a lesser extent in andesite, limestone, and serpentinite.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 266; Assessment Report 5016.

BJB (92O-24) (Fig. C, No. 94)

LOCATION: Lat. 51° 07′ Long. 123° 11′ (92O/3E)
CLINTON and LILLOOET M.D. Surrounding Lorna Lake which forms the headwaters of Big Creek, between 6,350 and 9,000 feet elevation.

CLAIMS: LORN 1 to 71.

OWNER: COMINCO LTD., 200 Granville Square, Vancouver.

METALS: Copper, molybdenum, lead, zinc.

DESCRIPTION: Hornfelsed andesites contain pyrite and chalcopyrite in fractures. The andesites are intruded by rhyolite and quartz monzonite.

WORK DONE: Surface diamond drilling, five BQ holes totalling 1,490 feet on Lorn 48 and 64.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 267; Assessment Report 5183.

COMIN HOME (Fig. C, No. 93)

LOCATION: Lat. 51° 11′ Long. 123° 09′ (92O/3E)
CLINTON M.D. At the mouth of Tosh Creek, draining into Big Creek, at approximately 6,500 feet elevation.

CLAIMS: COMIN HOME 1 to 16.

OWNERS: COMINCO LTD., 200 Granville Square and HOME OIL COMPANY LIMITED, 850 West Hastings Street, Vancouver.

DESCRIPTION: The claims are underlain by highly pyritized and iron-stained andesite with minor associated copper and gold.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims; road construction; trenching, 1,000 feet on Comin Home 4 and 11.

GRAB (92O-70) (Fig. C, No. 92)

LOCATION: Lat. 51° 12′ Long. 123° 17′ (92O/3W)
CLINTON M.D. The claims partially cover and extend west of Vic Lake, 7 miles northwest of Lorna Lake.

CLAIMS: GRAB 1 to 24.

OWNERS: COMINCO LTD., 200 Granville Square, Vancouver and HOME OIL COMPANY LIMITED, 850 West Hastings Street, Vancouver.

METALS: Copper, lead, zinc, molybdenum.

DESCRIPTION: Kingsvale argillite, conglomerate, and minor sandstone are overlain by andesite of undetermined age. These rocks are cut by numerous northerly striking dykes, which range from rhyolite to andesite and diorite. Chalcopyrite, pyrrhotite, and less galena and sphalerite are disseminated in the dykes and occur along fractures in the andesite.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims.

REFERENCE: Assessment Report 5159.

FISH LAKE (92O-41, 42) (Fig. C, No. 95)

LOCATION: Lat. 51° 28′ Long. 123° 37′ (92O/5E)
CLINTON M.D. Six miles north of the north end of Lower Taseko Lake, surrounding Fish Lake, at approximately 4,800 feet elevation.

CLAIMS: TK, BJ, K, etc., totalling approximately 200.

OWNERS: C. J. Robertson and Taseko Mines Limited.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, 555 Burrard Street, Vancouver.

METALS: Copper, gold.

DESCRIPTION: Quartz diorite, quartz feldspar porphyries, and hornfelsed volcanic rocks contain pyrite, chalcopyrite, and bornite in quartz-filled fractures and as disseminations.

WORK DONE: Surface diamond drilling, nine holes totalling approximately 6,000 feet on TK claims; road construction, 1 mile (access to drill sites).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 268; Assessment Report 4966.

NO. 1 VEIN, NO. 2 VEIN, RED BIRD VEIN, AND GIANT VEIN (92O-50 to 53) (Fig. C, No. 118)

LOCATION: Lat. 51° 20′ Long. 122° 29′ (92O/8W)
CLINTON M.D. Seventeen miles south-southwest of the Gang Ranch post office, on Black Dome Mountain, between 6,000 and 7,500 feet elevation.

CLAIMS: PINION PINE (Lot 7874), MOOSEHORN (Lot 7871), PTARMIGAN (Lot 7879), ELECTRUM FR. (Lot 7875), SADDLE (Lot 7872), BONANZA (Lot 7876), WHISKEY JACK (lot 7873), SUGARBOWL FR. (Lot 7880), ELDORADO (Lot 7877), BLACK DOME (Lot 7878).

OWNER: EMPIRE VALLEY GOLD MINES LTD., Box 100, Chilliwack.

(92O/10)

METALS: Gold, silver.
WORK DONE: Road construction, 25 miles on Black Dome.
REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1954, p. 98.

GC (92O-71) (Fig. C, No. 96)

LOCATION: Lat. 51° 39′ Long. 122° 46′ (92O/10)
CLINTON M.D. Forty-five miles southwest of Williams Lake, on Gaspard Creek, at approximately 4,000 feet elevation.
CLAIMS: GC 1 to 160.
OWNER: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.
METAL: Copper.
DESCRIPTION: Copper is present in an extensive pyrite zone in intrusive and volcanic rocks.
WORK DONE: Linecutting and magnetometer and electromagnetic surveys, 40 line-miles, 800-foot grid spacing covering all claims; IP survey, 16 line-miles, 1,600-foot grid spacing covering central portion of claim group; surface diamond drilling, four holes totalling 2,004 feet on GC 60, 61, and 62; road construction, 1 mile (between drill holes).
REFERENCE: Assessment Report 2705.

BONAPARTE RIVER 92P

SHANNON (Fig. C, No. 72)

LOCATION: Lat. 51° 20′ Long. 120° 53′ (92P/7W)
CLINTON M.D. Twenty-one miles east of 70 Mile House, 3.5 miles west-northwest of Sharpe Lake, at approximately 4,100 feet elevation.
CLAIMS: SHANNON 1 to 12, 18, 20, 22, 24 to 35.
OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.
DESCRIPTION: The rocks on the Shannon property are Lower Tertiary basaltic flows.
WORK DONE: Surface diamond drilling, one AX hole totalling 312 feet on Shannon 8.
REFERENCE: Assessment Report 5004.

BAR (Fig. C, No. 73)

LOCATION: Lat. 51° 18′ Long. 120° 04′ (92P/8E)
KAMLOOPS M.D. Nine miles north-northeast of Barriere, on Newhykulston Creek, at approximately 5,000 feet elevation.
CLAIMS: BAR 29 to 38.
OWNER: Highland Lode Mines Ltd.
OPERATOR: ABACA RESOURCE INDUSTRIES INC., 728, 510 West Hastings Street, Vancouver.

(92P/8E)

DESCRIPTION: Mississippian or younger Fennell Formation host rocks include metavolcanic and metasedimentary rocks, possibly intruded by Triassic or Jurassic leucocratic rocks.

WORK DONE: Magnetometer survey, 300-foot grid spacing covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 272.

RICK (Fig. C, No. 74)

LOCATION: Lat. 51° 27′ Long. 120° 03′ (92P/8E)
KAMLOOPS M.D. Six miles east-northeast of Little Fort, south side of Baldy Mountain, at approximately 6,500 feet elevation.

CLAIMS: RICK 1 to 8.

OWNER: DANIEL L. RABBITT, RR 4, Salmon Arm.

WORK DONE: Linecutting, 6.4 miles of grid covering Rick 1-4, 6, 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 273; Assessment Report 5122.

SONJA (92P-49) (Fig. C, No. 75)

LOCATION: Lat. 51° 38′ Long. 120° 01′ (92P/9E)
KAMLOOPS M.D. Half a mile east from Clearwater station, on the south side of the North Thompson River, at approximately 1,200 feet elevation.

CLAIMS: SONJA 2, 3, 7, 8.

OWNERS: ROBERT J. FRANKS (Sonja 2, 7, 8) and RAFT RIVER HUNTING GUIDES COMPANY, LTD. (Sonja 3), Box 70, Vavenby V0E 3A0.

METALS: Gold, copper, zinc, silver, lead.

DESCRIPTION: A quartz vein system occurs in paraschists and gneisses of Permian age.

WORK DONE: 1973 – claim and topography mapped on Sonja 2; 1974 – road construction, approximately 2 miles on Sonja 3; trenching, 150 feet and stripping, 8 by 6 by 100 feet on Sonja 3.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 318.

LV (Fig. C, No. 76)

LOCATION: Lat. 51° 32′ Long. 120° 23′ (92P/9W)
KAMLOOPS M.D. Eleven miles northwest of Little Fort, immediately east and north of Laurel Lake, at approximately 4,000 feet elevation.

CLAIMS: LV 27 to 72, ADD 1 to 26.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver.

DESCRIPTION: The central and southwest parts of the surveyed area are underlain by diorite and granodiorite of the Thuya batholith, and the northeast part is underlain by Nicola volcanic and sedimentary rocks that have been intruded by small bodies of pyroxenite and gabbro.

WORK DONE: Linecutting, 35.25 miles of grid; IP survey, 22.8 line-miles, 400 by 800-foot and 800 by 800-foot grid spacing; and magnetometer survey, 30.2 line-miles, 100 by 800-foot grid spacing covering LV 27-34, 41-72 and Add 1-5, 15-17, 20, 21, 23; percussion drilling, seven holes totalling 1,250 feet on LV 29, 31, 58, 70 and Add 1, 21; road construction, one-half mile on LV 29 and 70.

REFERENCE: Assessment Report 4947.

AA (92P-137) (Fig. C, No. 78)

LOCATION: Lat. 51° 34′ Long. 120° 21′ (92P/9W)
KAMLOOPS M.D. Sixteen miles northwest of Little Fort, at approximately 5,000 feet elevation.

CLAIMS: AA 1 to 20.

OWNER: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METAL: Copper.

DESCRIPTION: The claims are underlain by Jurassic sedimentary and volcanic rocks, which are cut by a few dykes of felsite and quartz feldspar porphyry. Siltstone, greywacke, conglomerate, and argillite are contained in a belt striking northwest through the centre of the claims; they contain pyrrhotite and pyrite disseminated along fractures and bedding planes. The flanking rocks are tuff and volcanic breccia. On AA 9 the tuff contains chalcopyrite and minor pyrite disseminated along fractures.

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 1,000 feet; ground magnetometer survey, 10 line-miles, 800 by 200-foot grid spacing; and geochemical soil survey, 278 samples, 10 line-miles, 800 by 200-foot grid spacing covering all claims.

REFERENCE: Assessment Report 5191.

FL (RO) (92P-6, 134) (Fig. C, No. 77)

LOCATION: Lat. 51° 35′ Long. 120° 26′ (92P/9W)
KAMLOOPS M.D. Sixteen miles northwest of Little Fort, near Friendly Lake, at approximately 5,000 feet elevation.

CLAIMS: FL 1 to 149.

OWNER: Vangulf Exploration Company.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, molybdenum, lead, silver.

DESCRIPTION: Tuffs and porphyritic augite-andesite rocks of the Nicola Group are intruded by a body of granite porphyry of Triassic or Jurassic age. Disseminated chalcopyrite, molybdenite, galena, and pyrite occur in a stockwork of quartz-pyroxene-orthoclase veins, and are associated with quartz, carbonate, and glaucophane on fractures.

(92P/10E)

WORK DONE: Ground magnetometer survey, 60 line-miles, 400 and 800 by 200-foot grid spacing covering FL 11-20, 35-39, 66-149; percussion drilling, 21 holes totalling 3,289 feet on FL 2-5, 8, 10-13, 15, 19, 27, 32, 40, 43, 44, 80, and 81.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 276; Assessment Report 5264.

SO (92P-7) (Fig. C, No. 79)

LOCATION: Lat. 51° 37′ Long. 120° 31′ (92P/10E)
KAMLOOPS M.D. Twelve miles northeast of Bridge Lake, on the south side of Windy Creek.

CLAIMS: FRI 1 to 50, BOG 1 to 50.

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Basic volcanic rocks are fractured, bleached, and intruded by monzonite, diorite, and gabbro. Pyrite and lesser chalcopyrite occur as disseminations and in fractures and veinlets in volcanic rocks.

WORK DONE: Surface diamond drilling, three BQ holes totalling 1,702 feet on Bog 3 and 19.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 277; Assessment Report 5137.

FLY (Fig. C, No. 83)

LOCATION: Lat. 51° 48′ Long. 121° 22′ (92P/14W)
CLINTON M.D. Approximately 700 feet east of 112 Mile House, off Highway 97.

CLAIMS: FLY 1 to 32.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.

WORK DONE: Frequency-domain IP survey, 7.1 line-miles covering Fly 1-10, 17-32.

REFERENCE: Assessment Report 4922.

YEP (92P-33?) (Fig. C, No. 85)

LOCATION: Lat. 51° 54′ Long. 121° 22′ (92P/14W)
CLINTON M.D. Five miles northwest of Timothy Lake, on the west side of Timothy Creek, at approximately 4,200 feet elevation.

CLAIMS: YEP 1 to 4.

OWNER: P. E. Fox.

OPERATOR: BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.

METALS: Copper, silver, lead, zinc.

DESCRIPTION: A shear zone in altered volcanic rocks is filled with carbonate and coarse aggregates of galena, chalcopyrite, and sphalerite.

WORK DONE: Linecutting, 4 miles; geochemical soil survey, 203 samples taken at 100-foot centres covering all claims.

REFERENCE: Assessment Report 5067.

WC (92P-108, 120) (Fig. C, No. 86)

LOCATION: Lat. 51° 59' Long. 121° 22' (92P/14W; 93A/3W)
CLINTON and CARIBOO M.D. Fourteen miles north of Lac la Hache, on the north and south sides of Spout Lake, at approximately 3,600 feet elevation.

CLAIMS: WC 1 to 28, 31 to 52, 74 to 76, 90 to 104, 107 to 132, 135 to 141, 192 to 206.

OWNER: Amax Exploration, Inc.

OPERATORS: WESTCOAST PETROLEUM LTD. and AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver and CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METAL: Copper.

DESCRIPTION: A skarn zone occurs along a monzonite-sedimentary rock contact which strikes northwest with the monzonite lying to the northeast. Structure along the skarn zone is not clear.

WORK DONE: Amax and Westcoast – magnetometer survey, 8 line-miles, 100 by 400-foot grid spacing covering WC 12-14, 25-28, 113, 114; Craigmont – surface diamond drilling, six holes totalling 3,979 feet on WC 26, 37, and 39; road construction, one-half mile covering WC 26, 37, and 39.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 279; Assessment Report 5010.

STAN, FIR (92P-32, 114) (Fig. C, No. 80)

LOCATION: Lat. 51° 48' Long. 121° 12' (92P/14E)
CLINTON M.D. Fifteen miles northeast of 100 Mile House, on the east and southeast sides of Spring Lake, between 3,300 and 3,500 feet elevation.

CLAIMS: STAN 3 to 6, FIR 1 to 6, MAC 3, 5, 6, SKULL 5, 7 to 10.

OWNER: CANWAY EXPLORATIONS LTD., 12042 – 56th Avenue, Surrey.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite and molybdenite are associated with fractures in an intrusive mass. The host rock is an altered leucocratic rock of undetermined age.

WORK DONE: Time-domain IP survey, 5.5 line-miles covering Skull 5, 7-10, Stan 3-6, and Mac 3, 5, 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 279; Assessment Reports 2303, 4993.

WILL (Fig. C, No. 84)

LOCATION: Lat. 51° 50′ Long. 121° 08′ (92P/14E)
CLINTON M.D. Fourteen miles north-northeast of 100 Mile House, on the north shore of Wilcox Lake.
CLAIMS: WILL 1 to 15.
OWNER: STYNRO DEVELOPMENT LTD., 202, 1084 Homer Street, Vancouver.
WORK DONE: Linecutting and magnetometer survey, 14 line-miles; geochemical soil survey, 190 samples taken at 400-foot centres covering all claims.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 280; Assessment Report 5037.

MATH (92P-133) (Fig. C, No. 81)

LOCATION: Lat. 51° 51′ Long. 121° 08′ (92P/14E)
CLINTON M.D. Six and one-half miles north-northwest of Forest Grove, at approximately 3,400 feet elevation.
CLAIMS: MATH 1 to 120, 127 to 130, 135 to 140.
OWNER: PICKANDS MATHER & CO., 1100 Superior Avenue, Cleveland, Ohio 44114.
METALS: Copper, molybdenum.
DESCRIPTION: Pyrite, chalcopyrite, and molybdenite occur along fractures and with narrow quartz veins. The host rock is altered monzonite of Triassic or Jurassic age.
WORK DONE: IP survey, 12.1 line-miles, 400-foot grid spacing covering Math 11, 13, 21-24, 32, 34, 41, 42, 52, 61; surface diamond drilling, nine holes totalling 1,934 feet on Math 21, 22, 23, and 24.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 280.

CLIVE (Fig. C, No. 82)

LOCATION: Lat. 51° 52′ Long. 121° 05′ (92P/14E)
CLINTON M.D. One and one-half miles northwest of the north end of Ruth Lake, at approximately 2,800 feet elevation.
CLAIMS: CLIVE 1 to 50.
OWNER: EXPLORAM MINERALS LTD., 1004, 510 West Hastings Street, Vancouver.
WORK DONE: IP survey, 5 line-miles, 400-foot grid spacing; magnetometer survey, 13 line-miles.

RM (92P-128) (Fig. C, No. 88)

LOCATION: Lat. 51° 49′ Long. 120° 48′ (92P/15W)
CLINTON M.D. Twenty-five miles northeast of 100 Mile House, on the south and east shores of Canim Lake, at approximately 4,000 feet elevation.

(92P/15W)

CLAIMS: RM 1 to 203.

OWNERS: DOME EXPLORATION (CANADA) LIMITED and NEWCONEX CANADIAN EXPLORATION LTD., 600, 365 Bay Street, Toronto, Ont. M5H 2V4.

METAL: Copper.

DESCRIPTION: Disseminations and fracture fillings of pyrite and chalcopyrite occur in volcanic and intrusive rocks of Triassic age.

WORK DONE: Percussion drilling, 16 holes totalling 3,260 feet on RM 3-6, 8, 31, 165, 166, and 197.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 280.

SHERI (92P-113, 132) (Fig. C, No. 87)

LOCATION: Lat. 51° 56′ Long. 120° 52′ (92P/15W)
CLINTON M.D. Six and one-half miles north-northwest of Eagle Creek, at approximately 3,000 feet elevation.

CLAIMS: SHERI 1 to 97, 99 to 130, SUCC 1 to 20.

OWNER: PICKANDS MATHER & CO., 1100 Superior Avenue, Cleveland, Ohio 44114.

METALS: Copper, iron.

DESCRIPTION: Disseminated pyrite and chalcopyrite occur in magnetite-rich, propylitic hornblendite and pyroxenite of unknown age.

WORK DONE: IP survey, 10.1 line-miles, 800-foot grid spacing covering Sheri 10, 17-20, 29-32, 40-44, 50-55, 59, 97, 100, 125, 126; surface diamond drilling, eight holes totalling 2,276 feet on Sheri 41, 42, 51, and 97.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 282.

NOD, SL, CS (92P-22, 26, 103) (Fig. C, No. 89)

LOCATION: Lat. 51° 47′ Long. 120° 24′ (92P/16W)
KAMLOOPS M.D. Eighteen miles northwest of Clearwater, surrounding Patricia Lake, at approximately 3,000 feet elevation.

CLAIMS: WAP 1 to 156.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., 2010, 65 Queen Street West, Toronto, Ont. M5H 2M5.

METAL: Molybdenum.

DESCRIPTION: Molybdenite flakes and rosettes occur in quartz veins in quartz monzonite of the Raft intrusion of Cretaceous age.

WORK DONE: Linecutting, 70 miles of grid; geochemical survey, 386 soil and stream sediment samples taken at varying intervals on a reconnaissance grid and magnetometer survey, 15.5 line-miles covering the west-central part of Wap 1-84; geochemical survey, 123 stream sediment samples taken at 200 and 400-foot intervals covering Wap 43-71, 73, 75-84.

REFERENCES: Assessment Reports 5083, 5084, 5085.

CAPE SCOTT 102I

BEN, HUR (Fig. C, No. 70)

LOCATION: Lat. 50° 44′ Long. 120° 01′ (102I/9E)
NANAIMO M.D. Five and one-half miles north of Holberg.

CLAIMS: BEN 1 to 20, HUR 1 to 20.

OWNERS: H. Veerman and W. Botel.

OPERATOR: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

DESCRIPTION: Bonanza volcanic rocks and Parson Bay Formation argillites are intruded by small plugs of diorite.

WORK DONE: Surface diamond drilling, eight holes totalling 3,377 feet on Hur 7 and Ben 13, 15, 18, 20.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 283.

ELK (Fig. C, No. 69) By G.E.P. Eastwood

LOCATION: Lat. 50° 45′ Long. 128° 04′ (102I/9E, 16E; 92L/13W)
NANAIMO M.D. Twenty-four miles west of Port Hardy, 8 miles northwest of Nahwitti Lake, extending from Northwest Nipple south-southeast to south of Knob Hill, at approximately 1,300 feet elevation.

CLAIMS: ELK 3 to 90, 95 to 104, 117 to 125, 127, 129 to 136, 341 to 380, 399, 400.

OWNER: Standard Oil Company of British Columbia Limited.

OPERATOR: CHEVRON STANDARD LIMITED, 833, 355 Burrard Street, Vancouver V6C 2H3.

DESCRIPTION: The sampled area is underlain mainly by altered Bonanza pyroclastic rocks. These are intruded by a large body of quartz diorite on the northeast and are overlapped by Lower Cretaceous conglomerate and sandstone on the southwest. The altered rocks are extensively mineralized with pyrite and pyrrhotite, and locally contain minor chalcopyrite and sphalerite.

WORK DONE: Geochemical surveys, 460 soil samples taken at 100 by 400-foot grid spacing from the south part of the claim area and 193 samples taken from the base of the till layer at 400 by 800-foot grid spacing, covering Elk 3-12, 25-38, 49-62, 73-80, 95-100, 117-125, 127, 129-136, 365, 367, 369, 371, 373-380; overburden drilling, 1,760 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 326; Assessment Report 5352.

DEER (Fig. C, No. 71)

LOCATION: Lat. 50° 47′ Long. 128° 06′ (102I/16E)
NANAIMO M.D. Approximately 8 miles north of Holberg, 2 miles west of Knob Hill.

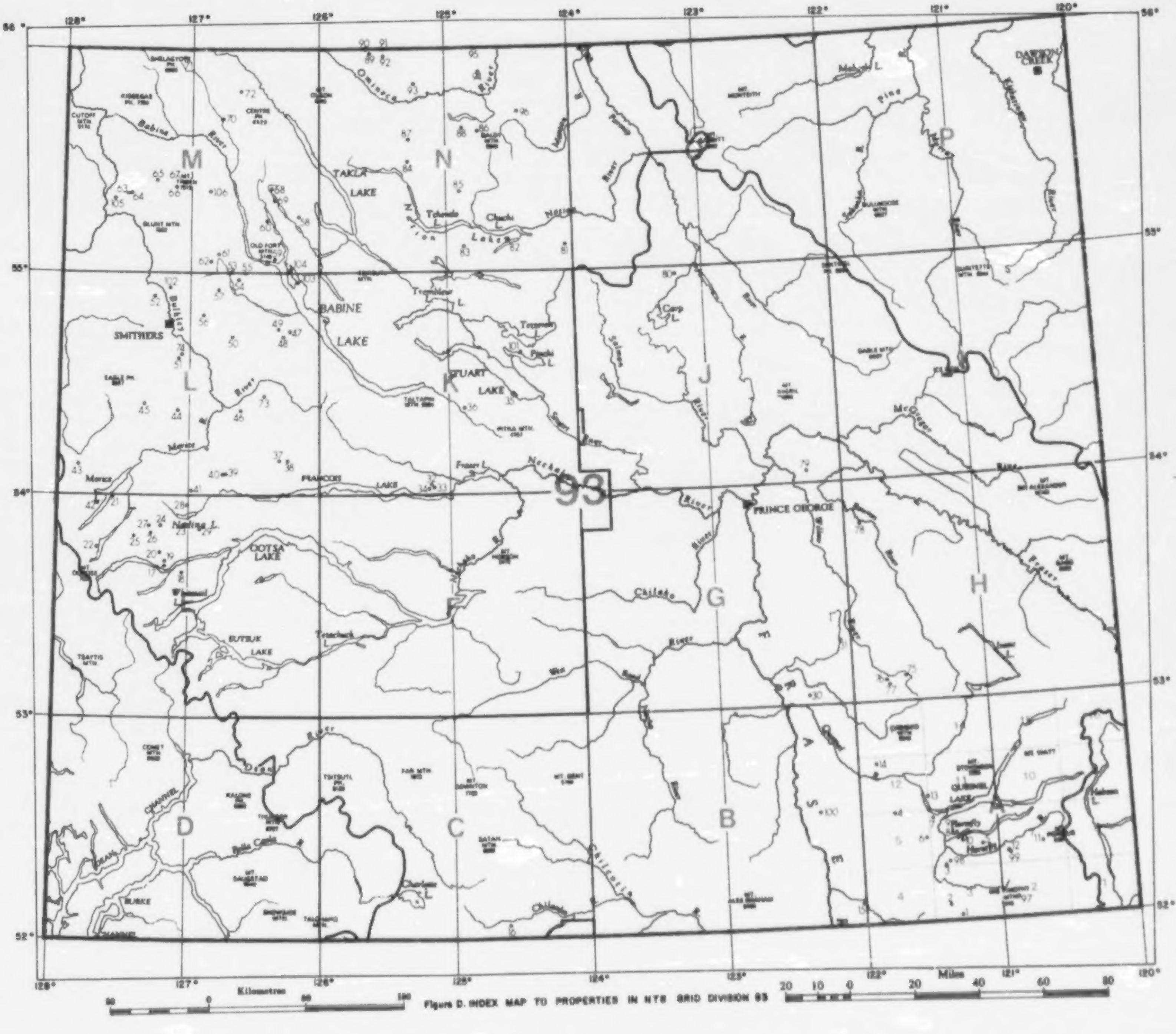
CLAIMS: DEER 1 to 72.

(102I/16E)

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

WORK DONE: Linecutting, 7.8 miles of grid; frequency-domain IP survey, 6.6 line-miles covering Deer 9-16, 27-30, 39, 41, 44, 46-52.

REFERENCE: Assessment Report 5038.



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DAWSON CREEK
TAKLA LAKE
BABINE LAKE
STUART LAKE
FRANCOIS LAKE
OOTSA LAKE
EUTSUK LAKE
QUESNEL LAKE
Babine River
Omineca River
Nation Lakes
Bulkley
Morice L
Nadina L.
Nechako R
Fraser L
Chilako River
Fraser River
Chilcotin
Charlotte L
Kilometres
Miles
0
20
40
60
80

Figure D. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 93

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EAST CENTRAL BRITISH COLUMBIA
(NTS Division 93 Figure D)

QUESNEL LAKE 93A

BOSS MOUNTAIN MINE (93A-1, 13 to 16) (Fig. D, No. 97)

By A. D. Tidsbury

LOCATION: Lat. 52° 06′ Long. 120° 54′ (93A/2W)
CARIBOO M.D. The mine is at the headwaters of Molybdenite Creek, on the east slope of Takomkane Mountain, approximately 58 miles easterly from 100 Mile House.

CLAIMS: Eleven Crown-granted claims including TOOTY FRUITY (Lot 11116), ANNE (Lot 11117), GERALDING (Lot 11118), BLACKIE (Lot 11119), UTOO (Lot 11120), and ADANAC (Lot 11123) and the located claims BEN, BOSS, CC, DAP, FC, HH, PR, RO, ROVER, etc., totalling approximately 90.

OWNER: NORANDA MINES, LIMITED (Boss Mountain Division), 1050 Davie Street, Vancouver V6E 1M4; mine address, Hendrix Lake V0K 1R0.

METAL: Molybdenum (production shown in Table 6).

DESCRIPTION: Molybdenite occurs as veinlets and seams in two silicified quartz diorite breccia pipes and as stockwork lenses and irregular veinlets in quartz veins.

WORK DONE:

Production is from a 5,000-foot main level adit and a 875-foot internal shaft below the main level. There is a crusher station and loading pocket at the shaft bottom. Haulage to the concentrator is by rail with electric locomotive and diesel back-up.

Mining is variable, generally by blasting to a slot from rings of blast holes drilled from sublevels. Recovery is by scram drift and by mucking machine from drawpoints.

Following shutdown in 1971, the mine resumed production in late 1973 and during 1974 493,904 tons of ore was milled producing 1,623 tons of concentrate.

Blasthole drilling totalled 323,500 feet, 215 feet of raise was driven, and 669 feet of subdrift was completed. Explosives consumed totalled 332 tons. The mine and concentrator have 6,828 connected horsepower and 21,914,000 kilowatt hours were used. Standby diesel electric capacity is 500 kilovolt-amperes.

Average employment during 1974 was 166. The company maintains single men's quarters at the minesite and a townsite at Hendrix Lake, 6 miles east of the minesite.

Major surface equipment includes: Caterpillar 933 front-end loader, Caterpillar 966 front-end loader, Caterpillar D-8 bulldozer, International TD-20 bulldozer, Champion grader, and a 10-cubic-yard Kenworth dump truck.

Approximately 2,927 feet of exploration drilling was completed on surface, with a limited amount of trenching, to evaluate open-pit production potential from associated low-grade ore deposits.

Reclamation under Permit 101 included research into suitable varieties and fertilizers for growth on test plots. The programme will be carried into 1975.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 210, 211; 1972, p. 329; 1973, pp. 287, 288.

SL (93A-113) (Fig. D, No. 1)

LOCATION: Lat. 52° 02′ Long. 121° 20′ (93A/3W; 92P/14W)
CARIBOO M.D. Fifteen miles northeast of Lac la Hache, on the north and east sides of Spout Lake, at approximately 4,000 feet elevation.
CLAIMS: SL, totalling 198.
OWNER: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.
METALS: Copper, coal.
DESCRIPTION: Minor chalcopyrite occurs in intrusive rocks. Coal seams occur in overlying Kamloops Group sedimentary rocks.
WORK DONE: IP survey, 8 line-miles, 1,000-foot grid spacing covering SL 13-22, 29-32, 43-48, 57-62; surface diamond drilling, one hole totalling 308 feet on SL 60.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 288.

BORY (93A-63) (Fig. D, No. 2)

LOCATION: Lat. 52° 03′ Long. 121° 24′ (93A/3W)
CARIBOO M.D. Eighteen miles north of Lac la Hache, 2.5 miles southwest of McIntosh Lake, at approximately 3,500 feet elevation.
CLAIMS: WE 1 to 16.
OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.
METAL: Copper.
DESCRIPTION: Bedrock geology is obscured by a thick blanket of alluvium. Abundant float and one outcrop of Miocene plateau basalt occur on the property.
WORK DONE: Magnetometer survey, 15 line-miles, reading every 100 feet on lines 400 feet apart covering all claims; geochemical soil survey, 2 line-miles, 50 samples taken every 200 feet on lines 400 feet apart covering WE 3-6, 11, and 12.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 330.

WC (Fig. D, No. 86)

LOCATION: Lat. 51° 58′ Long. 121° 22′ (92P/14W; 93A/3W)
Report on this property in section 92P/14W.

ANT (93A-115) (Fig. D, No. 6)

LOCATION: Lat. 52° 24′ Long. 121° 33′ (93A/5E)
CARIBOO M.D. Seven miles northwest of Horsefly on Antoine Creek, 2 miles upstream from the confluence with Beaver Creek, at approximately 3,000 feet elevation.
CLAIMS: ANT 1 to 58.
OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.
METAL: Copper.

(93A/5)

DESCRIPTION: Minor pyrite and chalcopyrite occur in and adjacent to an alkalic intrusive complex which cuts Nicola Group volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical rock chip survey, 38 samples covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 288, 289.

WET, GAVIN (93A-59) (Fig. D, No. 4)

LOCATION: Lat. 52° 30′ Long. 121° 44′ (93A/5)
CARIBOO M.D. Twelve miles southwest of Likely, immediately north and west from Little Gavin Lake, between 3,000 and 3,500 feet elevation.

CLAIMS: GET 1 to 8, GT 1 to 60.

OWNER: ZUBEX RESOURCES LTD., 112 Leonard Street, Quesnel.

METALS: Copper, molybdenum.

DESCRIPTION: Minor molybdenite, chalcopyrite, and pyrite occur in quartz and quartz feldspar veinlets along fractures. A quartz monzonite dyke swarm intrudes volcanic and sedimentary rocks.

WORK DONE: Geochemical soil survey, 19.5 line-miles, 400-foot grid spacing, 1,016 samples covering GT 25-60; linecutting, 22 miles of grid covering same claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 289; Assessment Reports 2733, 5105.

HS (93A-78) (Fig. D, No. 3)

LOCATION: Lat. 52° 15′ Long. 121° 25′ (93A/6W, 3W)
CARIBOO M.D. Five and one-half miles south of Horsefly, at approximately 3,000 feet elevation.

CLAIMS: HS 1 to 62, WL 1 to 54, RAY 1 to 38.

OWNER: EXPLORAM MINERALS LTD., 1004, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization consists of chalcopyrite and pyrite. Quartz monzonite and granodiorite intrude volcanic rocks.

WORK DONE: IP and magnetometer survey, approximately 40 line-miles covering all claims; surface diamond drilling, five holes totalling 2,964 feet on HS 5 and WL 4 and 5; road construction, 2 miles (west side of Mica Lake, 2 miles south along Deerhorn Creek).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 290; Assessment Report 5237.

RAY (Fig. D, No. 98)

LOCATION: Lat. 52° 17′ Long. 121° 20′ (93A/6W)
CARIBOO M.D. Five miles southeast of Horsefly, 1 mile southwest of the Horsefly River, at approximately 3,000 feet elevation.

(93A/6W)

CLAIMS: RAY 1 to 38.
OWNER: EXPLORAM MINERALS LTD., 1004, 510 West Hastings Street, Vancouver V6B 1L8.
WORK DONE: Linecutting and magnetometer survey, 8 line-miles; time-domain IP survey, 6 line-miles covering Ray 3-8, 13-16, 22, 26, 31-34.
REFERENCE: Assessment Report 5299.

FLY, PINE (93A-61, 2) (Fig. D, No. 10)

LOCATION: Lat. 52° 21′ Long. 121° 16′ (93A/6W)
CARIBOO M.D. One and one-half miles southeast of the west end of Horsefly Lake, at approximately 3,000 feet elevation.
CLAIMS: FLY 1 to 40, LEM 1 to 80.
OWNER: C. V. Critchlow.
OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.
METAL: Copper.
DESCRIPTION: Chalcopyrite occurs in fractures. An altered alkalic intrusive complex cuts Nicola volcanic rocks.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet; IP survey, 50.5 line-miles, 400-foot grid spacing; and ground magnetometer survey, 50.5 line-miles, 400-foot grid spacing covering all claims; geochemical rock chip survey, 129 samples, 400-foot grid spacing covering Fly 1-4, 9-18, 23-32; percussion drilling, 11 holes totalling 2,200 feet on Fly 25 and 26; road construction, 2.2 miles on Fly 13, 14, 25, 26, and 28 (between Lemon Lake road and drill sites).
REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 288, 289; Assessment Reports 5117, 5260.

HOOK (93A-112) (Fig. D, No. 9)

LOCATION: Lat. 52° 25′ Long. 121° 23′ (93A/6W)
CARIBOO M.D. Seven miles north-northeast of Horsefly, at approximately 3,000 feet elevation.
CLAIMS: HOOK 1 to 72, 87, 89, HOOKER 1 Fraction.
OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.
METAL: Copper.
DESCRIPTION: Pyrite and chalcopyrite occur in fractures and as disseminations. Up to 5 per cent sulphides occur in a monzonite-syenodiorite to monzonite porphyry intruding alkalic Nicola volcanic rocks.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet; IP survey, 17.4 line-miles, 400-foot grid spacing; ground magnetometer survey, 10 line-miles, 400-foot grid spacing; and geochemical soil survey, 10 line-miles, 400-foot grid spacing, 244 samples covering Hook 21-28 and 51-60; percussion drilling, 900 feet on Hook 55 and 57; road construction, 1,700 feet on Hook 57 and 59.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 288, 289; Assessment Reports 5087, 5088, 5089.

AL (93A-77) (Fig. D, No. 8)

LOCATION: Lat. 52° 28′ Long. 122° 20′ (93A/6W)
CARIBOO M.D. Five miles northeast of Horsefly, at Kwun Lake, at approximately 3,000 feet elevation.

CLAIMS: AL 1 to 116.

OWNERS: DOME EXPLORATION (CANADA) LIMITED, 600, 365 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., Box 40, Toronto-Dominion Centre, Toronto, Ont.

METALS: Copper, gold.

DESCRIPTION: Chalcopyrite, pyrite, and bornite are disseminated in altered volcanic rocks and syenite. An augite diorite stock and syenite cut intensely feldspathized volcanic rocks of Late Triassic age.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims; IP survey, 12 line-miles, 500-foot grid spacing covering Al 3-8, 15-20, 42, 44, 45, and 115; magnetometer survey, 50 line-miles, 500-foot grid spacing covering all claims; geochemical soil survey, 20 line-miles, 500-foot grid spacing, 477 samples covering all claims; percussion drilling, 12 holes totalling 3,160 feet on Al 6, 8, 15, 16, 17, 18, and 19; road construction, 4 miles on Al 13-18, 92, 102, and 104; trenching, 1,500 feet on Al 15-18.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 291, 292; Assessment Reports 5086, 5151.

LYNDA, SL, MB (93A-58, 82) (Fig. D, No. 7)

LOCATION: Lat. 52° 28′ Long. 121° 28′ (93A/6W)
CARIBOO M.D. Ten miles north of Horsefly, near Mitchell Bay on Quesnel Lake, at approximately 3,000 feet elevation.

CLAIMS: SL 1 to 100.

OWNERS: DOME EXPLORATION (CANADA) LIMITED, 600, 365 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., Box 40, Toronto-Dominion Centre, Toronto, Ont.

METAL: Copper.

DESCRIPTION: Mineralization occurs as disseminations and fracture fillings of pyrite and chalcopyrite. A succession of Triassic submarine volcanic rocks has been intruded by a small diorite-syenite stock.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering SL 1-100; IP survey, 8 line-miles, 500-foot grid spacing; geochemical soil survey, 4 line-miles, 200 by 500-foot grid spacing, about 200 samples covering SL 49-56; percussion drilling, seven holes, 1,600 feet on SL 13, 14, 15, 16, 19, 47; linecutting; road construction, two-thirds of a mile on SL 25 and 27; trenching, 1,200 feet on SL 1 and 13.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 292.

COREY (93A-114) (Fig. D, No. 5)

LOCATION: Lat. 52° 21' Long. 121° 05' (93A/6E)
CARIBOO M.D. Approximately 14 miles east of Horsefly and 3 miles south of Horsefly Lake, on Horsefly Mountain, at about 5,000 feet elevation.

CLAIMS: COREY 1 to 82.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization occurs as fracture-controlled chalcopyrite. An alkalic intrusive complex cuts Nicola Group volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical rock chip survey, 15 samples covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 289.

DO (93A-117) (Fig. D, No. 12)

LOCATION: Lat. 52° 18' Long. 120° 56' (93A/7W)
CARIBOO M.D. Twenty miles east of Horsefly, immediately north of Doreen Lake, at approximately 4,000 feet elevation.

CLAIMS: DO 1 to 30.

OWNERS: DOME EXPLORATION (CANADA) LIMITED, 600, 365 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., Box 40, Toronto-Dominion Centre, Toronto, Ont.

METAL: Copper.

DESCRIPTION: Minor pyrite and chalcopyrite occur as disseminations and fracture fillings. A diorite stock intrudes a sequence of Jurassic sedimentary rocks.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet and geochemical soil survey, 3 line-miles, 62 samples taken at 200-foot intervals on a 500-foot grid spacing covering DO 1-12.

PAM (Fig. D, No. 99)

LOCATION: Lat. 52° 18' Long. 120° 56' (93A/7W)
CARIBOO M.D. Straddling Doreen Lake, 1.5 miles north of McKinley Lake, at approximately 3,800 feet elevation.

CLAIMS: PAM 1 to 38.

OWNER: NEWMONT MINING CORPORATION OF CANADA LIMITED, 1230, 355 Burrard Street, Vancouver V6C 2G8.

DESCRIPTION: Very minor chalcopyrite mineralization occurs within a silicic, slightly pyritized, tuffaceous andesite horizon.

WORK DONE: Surface geological mapping on a reconnaissance scale covering all claims; geochemical soil survey, 62 samples taken every 200 feet on lines 750 feet apart, 1.14 line-miles covering Pam 1, 3, 15, 16.

EN (93A-11) (Fig. D, No. 11)

LOCATION: Lat. 52° 19′ Long. 120° 38′ (93A/7E)
CARIBOO M.D. Between 5,000 and 7,950 feet elevation 30 miles east of Horsefly (access is by dirt road from 150 Mile House; a 6-mile four-wheel-drive vehicle road leaves Horsefly River at MacKay Creek).

CLAIMS: EN 1 to 6, 14, 28, 29 Fraction, 104 to 107, 109, 126, 127, 129, EU 1 to 26, CS 55 and 56.

OWNERS: E. Scholtz and J. Carson.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver V6B 3T5.

METAL: Copper.

DESCRIPTION: Chalcopyrite, pyrrhotite, and pyrite occur in pods, veins, and as disseminations in granodiorite and augite porphyry. On Eureka Mountain, a thick sequence of siltstones and phyllites has been intruded successively by irregular bodies of amphibolite, augite porphyry, and granodiorite within the Quesnel Trough Mesozoic volcanic sequence.

WORK DONE: IP survey, 1.6 line-miles, 400-foot grid spacing covering EN 6, 29 Fraction, 105, and 127; surface diamond drilling, two holes totalling 1,204 feet on EN 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 331, 332; Assessment Report 5215.

CEDAR (Fig. D, No. 13)

LOCATION: Lat. 52° 35′ Long. 121° 30′ (93A/12E, 11W)
CARIBOO M.D. Four miles southeast of Likely on the north side of Cedar Creek, at 4,700 feet elevation.

CLAIMS: CEDAR 1 to 12, 16, 17, 19, 21, 23, 25, 27, ROSE 1 to 6.

OWNER: UNION CARBIDE EXPLORATION CORPORATION, 601, 1112 West Pender Street, Vancouver.

DESCRIPTION: The claims are underlain by andesite and phyllitic black argillite.

WORK DONE: Magnetometer survey, 5.9 line-miles, 400-foot grid spacing covering Cedar 4-8, 21, 23; IP survey, 5.5 line-miles, 400-foot grid spacing and geochemical soil survey, 8 line-miles, 400-foot grid spacing, 414 samples covering Cedar 4-9, 12, 21, 23, 25; surface diamond drilling, four holes totalling 1,694 feet on Cedar 8; linecutting, 9.1 miles on Cedar claims; road construction, 400 feet on Cedar 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 293; Assessment Report 5198.

MAUD (93A-119) (Fig. D, No. 14)

LOCATION: Lat. 52° 44′ Long. 121° 55′ (93A/12W)
CARIBOO M.D. Fifteen miles northwest of Likely, on the west side of Maud Lake, at approximately 3,700 feet elevation.

CLAIMS: MAUD 1 to 58.

(93B/1E)

OWNERS: DOME EXPLORATION (CANADA) LIMITED, 600, 365 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., Box 40, Toronto-Dominion Centre, Toronto, Ont.
METAL: Copper.
DESCRIPTION: Weakly disseminated chalcopyrite occurs in pyritic volcanic breccias. An augite diorite stock is enclosed by altered volcanic breccias.
WORK DONE: Geochemical soil survey, 24 line-miles, 500-foot grid spacing, 528 samples covering all claims.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 207 (LEM).

QUESNEL 93B

EM (93B-31) (Fig. D, No. 15)

LOCATION: Lat. 52° 06′ Long. 122° 01′ (93B/1E)
CARIBOO M.D. Approximately 1 mile south of the east end of Williams Lake, at approximately 2,000 feet elevation.
CLAIMS: EM 2, 4, 6, 7, 9, ALEX Fraction.
OWNER: CARPIQUET MINES LTD., Box 157, Ashcroft.
METAL: Copper.
DESCRIPTION: Disseminated chalcopyrite and bornite occur in a granodiorite of Mesozoic age.
WORK DONE: Surface diamond drilling, two holes totalling 125 feet on EM 7.

GIBRALTAR MINE (93B-6, 7, 12, 13) (Fig. D, No. 100)

By A. D. Tidsbury

LOCATION: Lat. 52° 31′ Long. 122° 17′ (93B/9W)
CARIBOO M.D. Twleve miles north of McLeese Lake, on Granite Creek and Lake, at approximately 4,000 feet elevation.
CLAIMS: A total of 325 claims, 134 of which are held under mineral leases.
OWNER: GIBRALTAR MINES LTD., Box 130, McLeese Lake.
METALS: Copper, molybdenum (production shown in Table 6).
DESCRIPTION:

Gibraltar mine is a unique plutonic porphyry copper-molybdenum deposit of Triassic age. Three major orebodies are distributed about a felsic core of a deformed zoned quartz diorite pluton. The orebodies are to be mined in sequence with the first stage of each involving production from the secondarily enriched part of the orebodies.

In 1974 activity occurred at all three bodies: stage 1 was completed at East Gibraltar, mining transferred to the Granite Lake orebody, and initial stripping occurred at the Pollyanna. The geology of the Granite Lake body is similar to East Gibraltar (GEM, 1973, p. 299-318), but the less deformed felsic core rocks are exposed as the western rim of the pit. Exposures of the orebody underneath the former lake show no oxidation or enrichment although this develops rapidly to the west.

WORK DONE:

The tonnage milled totalled 13,397,264, from which 151,295 tons of concentrate was recovered. Tons of waste removed totalled 18,112,000 (pit), 7,000,000 (overburden), 1,021,000 (silt), that is, 26,133,000 tons overall.

Major pit and transport equipment includes: three P&H 2100 shovels, one P&H 2100-BL shovel, one Marion 191-M shovel, two Bucyrus Erie 45-R drills, one Marion M-4 drill, twenty-seven 100-ton Lectra haul trucks, two Caterpillar 769 trucks, bulldozers, graders, and various other ancillary and service vehicles.

Explosives consumed amounted to 10,062 tons.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, pp. 163-173; 1971, p. 143; 1972, p. 338; 1973, pp. 299-318.

ANAHIM LAKE 93C

CA (93C-9) (Fig. D, No. 16)

LOCATION: Lat. 52° 04' Long. 124° 37' (93C/2E)
CARIBOO M.D. Ten miles north of Tatla Lake village on the Chilanko River, at approximately 5,000 feet elevation.

CLAIMS: CA 1 to 573.

OWNER: PICKANDS MATHER & CO., 1100 Superior Avenue, Cleveland, Ohio 44114.

METAL: Copper.

DESCRIPTION: The area most thoroughly investigated includes the ridge south of the Chilanko River extending 4 miles below the mouth of Sucker Creek, the shallow valley to the south, and part of the slope south of this valley. The east 60 per cent of the ridge is underlain by diorite and gabbro. The west part and the area to the south is underlain by Mesozoic andesite, capped by patches of Tertiary basalt. Pyrite is disseminated in the andesite, and pyrite and minor chalcopyrite and malachite fill fractures in diorite. Traces of chalcopyrite, bornite, and malachite occur on the south slope of the shallow valley.

WORK DONE: 1973 – surface geological mapping, 1 inch equals 660 feet covering 7.2 square miles; linecutting, 100 miles of grid; geochemical survey, 2,596 soil samples taken at 200 by one-half-mile grid spacing and 93 soil samples taken at 100-foot centres; 64 reconnaissance mercury soil-gas determinations; airborne magnetometer survey, 288 line-miles covering all claims; 1974 – linecutting, 20.5 miles of grid; fill-in geological mapping, 1 inch equals 400 feet; geochemical soil survey, 417 samples taken at 200 by 400-foot grid spacing; 420 mercury soil-gas determinations at 400-foot centres and 78 on a reconnaissance survey; 12 trenches and shallow pit excavated; road construction, 10.5 miles; percussion drilling, 28 holes totalling 5,890 feet; IP survey, 10 line-miles.

REFERENCES: Assessment Reports 5282, 5283.

WHITESAIL LAKE 93E

MAX (Fig. D, No. 18)

LOCATION: Lat. 53° 40' Long. 127° 02' (93E/11E)
OMINECA M.D. One mile southeast of Ox Lake and 5 miles east-southeast of Huckleberry Mountain, at approximately 3,200 feet elevation.

CLAIMS: MAX 1 to 45.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

WORK DONE: Ground magnetometer survey, 11 line-miles, 400-foot grid spacing covering Max 4, 6, 8, 11-16.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 324, 325.

HUCKLEBERRY (LEN) (93E-37, 38, 39) (Fig. D, No. 17)

LOCATION: Lat. 53° 41' Long. 127° 10' (93E/11E)
OMINECA M.D. Between Huckleberry Mountaan and Tahtsa Reach, at approximately 3,400 feet elevation.

CLAIMS: LEN 1 to 58, 60 to 84, 86, 88, 90, 92, 94, 96, 98, 100, BERRY 2 to 4 Fractions, LEO 1 to 32.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: GRANBY MINING CORPORATION, 1700, 1050 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite and molybdenite with quartz and pyrite occur in fractures in hornfelsed Hazelton volcanic rocks adjacent to a granodiorite stock.

WORK DONE: Stream sampling to establish element concentrations prior to any ground disturbance.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 319, 320.

WEE (93E-86) (Fig. D, No. 19)

LOCATION: Lat. 53° 44' Long. 127° 09' (93E/11E)
OMINECA M.D. Surrounding the east end of Sweeney Lake and extending 3 miles east of Sweeney Lake, at approximately 3,000 feet elevation.

CLAIMS: WEE 1 to 40, 41, 43, 45, 47, 49, 51, 53, 55, 57 to 103, 110 to 142.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs in shatter breccia. Andesitic and tuffaceous Hazelton volcanic rocks are intruded by several small acidic bodies.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Wee 1-20 and 1 inch equals one-quarter mile covering Wee 69-91, 110-142; ground magnetometer survey, 12 line-miles, 400-foot grid spacing covering Wee 1-8, 10, 12, 14, 16, 41, 43, 45, 63-74; geochemical soil survey, 100 samples, 400-foot grid spacing, 2 line-miles covering Wee 5-8, 63, 69, 70.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 324, 325.

SUS (93E-87) (Fig. D, No. 20)

LOCATION: Lat. 53° 44′ Long. 127° 09′ (93E/11E)
OMINECA M.D. At the junction of Comb and Whiting Creeks, 2 miles northeast of Sweeney Lake, between 3,300 and 4,100 feet elevation.

CLAIMS: SUS 1 to 44.

OWNER: BETHLEHEM COPPER CORPORATION, 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METAL: Copper.

DESCRIPTION: Mineralization is generally weak and consists of pyrite and rare chalcopyrite in intrusive rocks and pyrite, pyrrhotite, and rare chalcopyrite in a sedimentary unit. Percussion holes intersected a variety of sedimentary and volcaniclastic rocks which have been intruded by a felsic body, probably granitic, which is strongly altered in one hole.

WORK DONE: Percussion drilling, four holes totalling 1,270 feet on Sus 9, 24, 29, and 31; road construction, 1.5 miles (Tahtsa road to drill sites).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 320; Assessment Report 5287.

PC (JOW) (93E-11) (Fig. D, No. 42)

LOCATION: Lat. 53° 57′ Long. 127° 46′ (93E/13W)
OMINECA M.D. Four miles west of Morice Lake, 5 miles southwest of Atna Bay, between 5,500 and 6,500 feet elevation.

CLAIMS: JOW 1 to 20.

OWNER: F. H. Jowsey.

OPERATOR: AGRESSIVE MINING LTD., 1014, 111 Richmond Street West, Toronto, Ontario M5H 2G4.

METALS: Zinc, gold, copper, silver.

DESCRIPTION: Small stocks of quartz porphyry and feldspar porphyry intrude Hazelton Group volcanic rocks. Sphalerite, galena, chalcopyrite, and pyrite occur in a network of quartz stringers in quartz porphyry near the contact with volcanic rocks.

WORK DONE: 1973 – surface diamond drilling, five holes totalling 1,025 feet on Jow 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 323.

DW, CUP (93E-55) (Fig. D, No. 22)

LOCATION: Lat. 53° 46' Long. 127° 42' (93E/13E, 12E)
OMINECA M.D. On the west shore of Nanika Lake, immediately south of Fenton Creek, at approximatley 3,500 feet elevation.

CLAIMS: DW 1 to 14, CUP 1 to 12, 17 to 38, CORB 1 to 10, 12, 15 to 22, 41, 42, 49, 50, 59 to 69, 79, 80, PUC 1 and 2.

OWNER: Aston Resources Limited.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1060, 1055 West Hastings Street, Vancouver.

METALS: Copper, (molybdenum).

DESCRIPTION: Chalcopyrite, pyrite, and minor bornite occur in a fault zone separating granitic rocks of the Coast Plutonic Complex and volcanic rocks of the Hazelton Group.

WORK DONE: Surface diamond drilling, six holes totalling 2,569 feet on DW 3, 7, 8, Cup 18, and Corb 9; road construction, 3 miles (from DW 3 to Corb 9).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 321.

RD (93E-83) (Fig. D, No. 21)

LOCATION: Lat. 53° 59' Long. 127° 34' (93E/13E; 93L/4E)
OMINECA M.D. Approximately 2 miles east of Morice Lake, on the north slope of Redslide Mountain, at about 5,000 feet elevation.

CLAIMS: RD 1 to 8, 10, 13 to 20.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Copper, molybdenum, silver.

DESCRIPTION: A red granite stock intrudes Hazelton volcanic rocks. Molybdenite occurs in fractures in the intrusive rocks and chalcopyrite occurs in fracture zones in the volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering RD 17-20; geochemical soil survey, 114 samples, 200-foot grid spacing, 2.25 line-miles covering same claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 322.

BERG (93E-46) (Fig. D, No. 25)

LOCATION: Lat. 53° 48' Long. 127° 26' (93E/14W)
OMINECA M.D. Six miles south of Kidprice Lake in the Tahtsa Range, north of Tahtsa Lake, between 5,000 and 6,000 feet elevation.

CLAIMS: Mineral Lease M-95 (BERG 15), BERG 11 to 24, 31, 34, 35, 37 to 44, 50, 51, 54, 55, 63, 66 to 71, 73 to 86, 132 to 145, 251 to 262, 264 to 281, BERG 1 and 72 Fractions, TAKI 1 to 22, SUN 1 to 80.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: CANEX PLACER LIMITED, 800, 1030 West Georgia Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Middle Jurassic Hazelton Group fragmental volcanic rocks, tuffs, and agglomerates have been intruded by a dioritic offshoot of the Coast Plutonic Complex. A younger stock of Tertiary quartz monzonite porphyry was intruded along the volcanic-diorite contact. Chalcopyrite, molybdenite, pyrite, and gypsum occur in concentric zones around the quartz monzonite porphyry stock.

WORK DONE: Surface diamond drilling, 20 holes totalling 6,049 feet on Berg 17, 18, 19, 20, 21, and 39.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 323.

SLIDE (Fig. D, No. 26)

LOCATION: Lat. 53° 50' Long. 127° 18' (93E/14W)
OMINECA M.D. Eight miles west of Twinkle Lake, at approximately 3,600 feet elevation.

CLAIMS: SLIDE 1 to 95.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

DESCRIPTION: Traces of pyrite occur in quartz diorite.

WORK DONE: Percussion drilling, eight holes totalling 912 feet on Slide 12, 14, 15, 59, and 68; road construction, 1.5 miles on Slide 10, 12-14, and 16.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 324, 325; Assessment Report 5214.

SYLVIA (93E-89) (Fig. D, No. 24)

LOCATION: Lat. 53° 51' Long. 127° 11' (93E/14E)
OMINECA M.D. Five miles west-northwest of Twinkle Lake, at approximately 3,400 feet elevation.

CLAIMS: SYLVIA 1 to 36.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Copper and molybdenum are weakly disseminated in quartz diorite. Quartz diorite and andesitic volcanic rocks are interbedded with tuffaceous volcanic rocks.

WORK DONE: Percussion drilling, 10 holes totalling 1,740 feet on Sylvia 3, 5, 13, and 14; road construction, 2 miles on Sylvia 3, 5, 9, 13, 14, 20, 22, and 24.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 324, 325; Assessment Reports 5054, 5213.

CS, NS (93E-90) (Fig. D, No. 27)

LOCATION: Lat. 53° 53' Long. 127° 16' (93E/14W)
OMINECA M.D. Six miles west of Nadina Lake, on the south flank of Smoke Mountain, at approximately 4,500 feet elevation.

CLAIMS: CS 1 and 2, NS 1 to 34, NS 1 to 9 Fractions, SMOKE 1 to 3, SMOKE 1 Fraction.

OWNER: Norwich Resources Ltd.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver.

(93E/14E, 15W)

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, minor chalcopyrite, molybdenite, and traces of sphalerite occur within and peripheral to a northeast-trending stock of trachyte and trachyandesite which is situated within a larger stock of quartz diorite and granodiorite. The host rocks are well fractured and exhibit concentric zones of hydrothermal alteration.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering NS 1-6, 11, 13-20, 25-34, NS 1-3, 5, and 8 Fractions, Smoke 1-3, Smoke 1 Fraction, and CS 1, 2; IP survey, 5.50 line-miles, 400 by 400 and 800-foot grid spacing covering NS 1, 2, 13, 15, 17, 18, 20, 25-34 and NS 6, 7 Fractions; magnetometer survey, 5 line-miles, 200 by 400 and 800-foot grid spacing covering NS 1, 2, 15, 17, 18, 25-34; geochemical soil survey, 91 samples, 2.3 line-miles, 400 by 400 and 800-foot and 100 by 400-foot grid spacing covering NS 1, 2, CS 1, 2, Smoke 1, 2; surface diamond drilling, eight holes totalling 2,421 feet on CS 1, 2, NS 2, 4, 20, NS 1 Fraction; topography mapped; linecutting, 5.5 miles of grid.

REFERENCES: Assessment Reports 5098, 5139.

DUAL (CON, LILY) (93E-53) (Fig. D, No. 28)

LOCATION: Lat. 53° 57' Long. 127° 00' (93E/14E, 15W)
OMINECA M.D. Four miles northeast of Nadina Lake and 1.5 miles south of Hill-Tout Lake, at approximately 3,000 feet elevation.

CLAIMS: HT, AFP, LIL, FROST, totalling approximately 100.

OWNERS: C. J. Robertson and K. W. Livingstone.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, 555 Burrard Street, Vancouver.

METALS: Copper, molybdenum, zinc.

DESCRIPTION: Pyrite, chalcopyrite, molybdenite, and sphalerite occur in fractures and as disseminations in Hazelton ? volcanic and sedimentary rocks, Cretaceous ? sedimentary rocks, and Cretaceous or Tertiary feldspar porphyry and quartz monzonite.

WORK DONE: IP survey, 10 line-miles, 1,000-foot grid spacing; percussion drilling, 25 holes totalling approximately 4,000 feet; road construction, 3 miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 325; Assessment Reports 5166, 5207.

PAM (93E-88) (Fig. D, No. 23)

LOCATION: Lat. 53° 52' Long. 127° 01' (93E/14E)
OMINECA M.D. Two miles south of the southeastern arm of Nadina Lake, at approximately 3,500 feet elevation.

CLAIMS: PAM 1 to 108.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

METALS: Copper, molybdenum.

(93E/15W)

DESCRIPTION: Copper and molybdenum mineralization is weakly disseminated in altered quartz monzonite which intrudes Hazelton tuffaceous volcanic rocks.

WORK DONE: Percussion drilling, 19 holes totalling 3,565 feet on Pam 25-28, 30, 42-47, 61, 63, and 64; road construction, 4 miles on Pam 10-12, 25-27, 42-47, 61-66.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 324, 325; Assessment Report 5223.

TETS (93E-84) (Fig. D, No. 29)

LOCATION: Lat. 53° 51′ Long. 126° 56′ (93E/15W)
OMINECA M.D. Five miles east-northeast of Twinkle Lake, at approximately 4,000 feet elevation.

CLAIMS: TETS 3 to 54, TETS 55 to 63 Fractions.

OWNER: J. Shelford.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1060, 1055 West Hastings Street, Vancouver.

METALS: Copper, zinc, lead, silver.

DESCRIPTION: Bornite, chalcopyrite, and sphalerite occur in narrow stringers and as pods in Hazelton volcanic rocks.

WORK DONE: Geochemical soil survey, 154 samples, 100-foot grid spacing covering Tets 3, 4, 7, 8; trenching, 72 feet on Tets 15 and 16.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 326.

POPLAR (93L-239) (Fig. D, No. 41)

LOCATION: Lat. 54° 01′ Long. 126° 58′ (93L/2W; 93E/15W)
Report on this property in section 93L/2W.

PRINCE GEORGE 93G

WANDA (93G-3) (Fig. D, No. 30)

LOCATION: Lat. 53° 03′ Long. 122° 20′ (93G/1W)
CARIBOO M.D. Eight miles northeast of Quesnel on Mouse Mountain, at approximately 3,000 feet elevation.

CLAIMS: WANDA 1 to 12, 17, 18, WD 21, 23, 25, 28, 30, 32, WH 1 to 6 Fractions.

OWNERS: C. Fuller and S. Pearson.

OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

METALS: Copper, silver.

DESCRIPTION: Mineralization is disseminated and fracture controlled chalcopyrite and tetrahedrite. Chalcopyrite mineralization occurs in and adjacent to alkalic intrusions in Nicola volcanic rocks.

(93G/8E)

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims and 1 inch equals 100 feet covering Wanda 5-8 and WH 3 Fraction; and IP survey, 18.6 line-miles, 400-foot grid spacing; ground magnetometer survey, 18.6 line-miles, 400-foot grid spacing; geochemical soil survey, 17.2 line-miles, 400-foot grid spacing, 377 samples; geochemical rock chip survey, 17.2 line-miles, 400-foot grid spacing, 130 samples covering all claims; linecutting, 16 miles of grid; topography mapped.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 200; Assessment Report 5127.

MURRAY, GEO (Fig. D, No. 31)

LOCATION: Lat. 53° 17' Long. 122° 05' (93G/8E)
CARIBOO M.D. Eighteen miles east of Strathnaver, at the northeast end of Ahbau Lake, at approximately 3,100 feet elevation.

CLAIMS: MURRAY 1, 2, 15 to 22, GEO 1 to 30, 37 to 56.

OWNERS: Kenneth P. Riddel (Murray claims) and G. A. Checklin (Geo claims).

OPERATOR: HALFERDAHL & ASSOCIATES LTD., 18, 10509 – 81st Avenue, Edmonton, Alta. T6E 1X7.

DESCRIPTION: Quartz biotite and graphitic schists occur in an area of poor exposure.

WORK DONE: VLF EM survey, 8.5 line-miles; horizontal loop EM survey, 8.5 line-miles; magnetometer survey, 8.5 line-miles; gravity survey, 5.7 line-miles covering Murray 1, 3, 14-22 and Geo 1, 3, 5, 21-24; linecutting, 8.5 miles of grid.

REFERENCE: Assessment Report 5155.

McBRIDE 93H

CHISHOLM (93H-35) (Fig. D, No. 77)

LOCATION: Lat. 53° 04' Long. 121° 42' (93H/4E)
CARIBOO M.D. Six miles southwest of Wells, on the southeast slope of Mount Nelson, at approximately 4,000 feet elevation.

CLAIMS: CHISHOLM 1 to 4, 7 Fraction (Lots 10428 to 10431 and 10434), WONDER, WONDER Fraction (Lots 1674, 1679), GARBO, GARBO NO. 1 (Lots 1675, 1662), BURNS 14 to 16 (Lots 8895 to 8897), GLORIA 2 (Lot 8899), OSLO Fraction (Lot 1676).

OWNER: GOLDEN ARK EXPLORATIONS LTD., Box 904, Vernon.

METALS: Gold, silver.

WORK DONE: Trenching, 1,000 feet and stripping, 200 by 5 by 20 feet on Lots 10430 and 10431.

BUZ (93H-18) (Fig. D, No. 76)

LOCATION: Lat. 53° 05' Long. 121° 44' (93H/4E)
CARIBOO M.D. Five and one-half miles west of Wells, on the northeast slope of Mount Nelson, at approximately 4,000 feet elevation.

CLAIMS: BUZ 1 to 12, 31 to 42, 44, 61 to 74, ZUB 1 Fraction.

OWNER: GOLDEN ARK EXPLORATIONS LTD., Box 904, Vernon.

METALS: Gold, silver.

WORK DONE: Trenching, 1,000 feet on Buz 31, 34, 63, and 64; stripping, 3 by 330 by 33 by 10 feet on Buz 70 and 72.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 328.

MOSQUITO (93H-10) (Fig. D, No. 75) By A. D. Tidsbury

LOCATION: Lat. 53° 07' Long. 122° 36' (93H/4E)
CARIBOO M.D. The property is centred 1.5 miles northwest of Wells, between 4,100 and 4,500 feet elevation.

CLAIMS: Twenty-nine Crown-granted claims including MOSQUITO (Lot 10355), MOSQUITO Fraction (Lot 10359), VANCOUVER (Lot 10356), PORT HOPE (Lot 10357), SEATTLE (Lot 10358).

OWNER: Mosquito Creek Gold Mining Company Limited.

OPERATOR: HOME OIL COMPANY LIMITED, 304 Sixth Avenue SW., Calgary, Alta.

METALS: Gold, silver.

DESCRIPTION: Quartz veins and limestone are replaced by iron pyrite which contains gold and minor silver values. Mineralization occurs in the Baker and Rainbow members of the Cariboo Series.

WORK DONE:

A four-station, three-compartment shaft was completed to a total depth of 514 feet, 100 feet of station cut, and 93 feet of drifting done. The claims were surveyed and a topographic map prepared at a scale of 1 inch equals 100 feet.

Shaft timbering, stations, hoist, on-site power generation, air compressor, and ancillary facilities were in operation. Connected horsepower is presently 570.

Major installations and equipment are: one CIR double-drum 60 by 36-inch hoist with 1-inch rope; one Deutz A-12L-74 diesel generator, 125 kilowatt; one Caterpillar C-353 T-A diesel generator, 300 kilowatt; one Gardner-Denver compressor, 600 cubic feet per minute; one Atlas-Copco compressor, 600 cubic feet per minute; one Bilton class pump, three-phase 440-volt, 400-foot head.

Exploratory drifting for ore zones and diamond drilling were continuing.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 328, 329.

UG, LAD (93H-36) (Fig. D, No. 78)

LOCATION: Lat. 53° 49' Long. 121° 53' (93H/13W)
CARIBOO M.D. Thirty-five miles east-southeast of Prince George, along Bowron River, at approximately 2,450 feet elevation.
CLAIMS: UG 1 to 30, LAD 1 to 40, 89 to 110, 137 to 154, 177 to 216.
OWNER: ZULU EXPLORATIONS LTD., 8, 1070 Douglas Street, Victoria.
METALS: Coal, uranium, germanium.
DESCRIPTION: Uranium and germanium occur in shale beds below coal seams. Resin, germanium, and uranium occur in the coal seams. A sequence of shales, sandstones, conglomerates, and coal seams are present.
WORK DONE: Surface diamond drilling, four holes totalling 3,202 feet on UG 7 and Lad 2, 90, and 177.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 527, 528 (Northern Coal Mines Limited); Assessment Reports 4953, 5103, 5113, 5243.

McLEOD LAKE 93J

GISCOME (93J-1) (Fig. D, No. 79)

LOCATION: Lat. 54° 03' Long. 122° 20' (93J/1W)
CARIBOO M.D. One and one-half miles east of Giscome.
CLAIMS: JHG 1 to 10, SAMPSON 1 to 14, TIN 7 to 11, NAC 1 to 6, NIT 1 to 4, NOS 1 to 8, ELSA Fraction.
OWNER: CENTRAL B.C. EXPLORATION LTD., 1726 West 14th Avenue, Vancouver.
METALS: Silver, lead, zinc, niobium.
DESCRIPTION: The claims are underlain by a north-trending succession of gneiss, limestone, argillite, and andesite with lesser dacite. Gneiss and limestone have been altered to epidote and garnet skarn along their mutual contact. On JHG 3 and 5 the skarn contains thin bands of massive sphalerite and galena. All rocks, including the skarn, are intruded by a swarm of felsite and quartz-feldspar porphyry dykes.
WORK DONE: Relogging of core from 15 diamond-drill holes, compilation of a revised geological plan, and reinterpretation of the geology covering JHG 1-7 and Sampson 6, 8; property examination and compilation of previous data covering JHG 3 and 5.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 350, 351 (Samson, Tin, Can); Assessment Reports 636, 3043, 4907, 4938.

BRUCE (Fig. D, No. 80)

LOCATION: Lat. 54° 57' Long. 123° 12' (93J/14E)
CARIBOO M.D. Seven miles west-southwest of McLeod Lake, 3.5 miles west-northwest of Warhorse Lake.
CLAIMS: BRUCE 1 to 4.

(93K/3E)

OWNER: Kolbjorn Lovang.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver V6C 1N5.

DESCRIPTION: Slide Mountain argillite is intruded by a dyke of gabbro and pyroxenite.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; geochemical soil survey, 91 samples taken at 100 by 200-foot grid spacing covering Bruce 1 and 4.

REFERENCE: Assessment Report 4999.

FORT FRASER 93K

ENDAKO MINE (93K-6) (Fig. D, No. 33)

By J. F. Hutter

LOCATION: Lat. 54° 02' Long. 125° 07' (93K/3E)
OMINECA M.D. Five miles southwest of Endako village, at approximately 3,200 feet elevation.

CLAIMS: A total of 365 mineral claims of which 22 are held under lease, including BOOT, TAN, ELK, BAR, JAY, and MO.

OWNER: CANEX PLACER LIMITED, Endako Mines Division, Endako V0J 1L0.

METAL: Molybdenum (production shown in Table 6).

DESCRIPTION: The Endako orebody occurs in an elongated elliptically shaped quartz vein stockwork. The westerly plunging body strikes north 60 degrees west and gradually changes dip from 60 degrees south at the west end to 40 degrees south at the east end over an 11,000-foot length. Molybdenite mineralization occurs with quartz as veins and fracture fillings in a restricted stockwork, which is developed in a quartz monzonite rock unit of the Francois Lake intrusions.

WORK DONE:

Open-pit mining continued during the year. Concentrates were marketed both as molybdenite and molybdic oxide.

Pit equipment purchased during the year included four 100-ton Lectra haul units, one crawler tractor, one 13-cubic-yard electric shovel, and one 9-inch rotary electric drill.

Construction was completed on rehabilitation of a 10-foot diameter 4-hearth gas-fired drier. An additional bank of eleven 600-cubic-foot flotation machines was installed in the concentrator. Construction commenced on the expansion of roasting capacity and the installation of an SO_2 scrubbing plant. The pit equipment repair shop was enlarged by the addition of two truck bays.

Nine diamond-drill holes, totalling 7,700 feet, and nine percussion holes, totalling 1,460 feet, were drilled and an area 3,000 by 500 feet was stripped of overburden.

A total of 518 persons was employed by the mine at the end of the year.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 330.

NU, ELK (93K-8) (Fig. D, No. 32)

LOCATION: Lat. 54° 03' Long. 125° 08' (93K/3E)
OMINECA M.D. Five miles southwest of Endako village, at approximately 3,200 feet elevation.
CLAIMS: NU, ELK, DEER, CORA, DIS, DAT, totalling 74.
OWNER: Denak Mines Ltd.
OPERATOR: CANEX PLACER LIMITED, Endako Mines Division, Endako V0J 1L0.
METAL: Molybdenum.
DESCRIPTION: A quartz-molybdenite stockwork occurs in weak to intensely kaolinitized Endako quartz monzonite.
WORK DONE: Surface diamond drilling, 18 holes totalling 9,547 feet on Elk 3 Fraction and Nu 3, 4; percussion drilling, 27 holes totalling 6,970 feet on Elk 5, 7, Elk 3, 13 Fractions, and Nu 3-6; road construction, approximately 2 miles on Elk 7, 13 Fraction and Nu 3-6.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 331; Assessment Reports 5021, 5227.

ROB, FRAN (93K-80, 13) (Fig. D, No. 34)

LOCATION: Lat. 54° 02' Long. 125° 09' (93K/3E)
OMINECA M.D. Six miles southwest of Endako village.
CLAIMS: ROB 1 to 22, FRAN 34, 36, 38, 40, 42, 44.
OWNER: DANKOE MINES LTD., 2002, 1177 West Hastings Street, Vancouver V6E 2K3.
METAL: Molybdenum.
DESCRIPTION: Minor molybdenite was encountered in four percussion holes.
WORK DONE: Percussion drilling, four holes totalling 900 feet on Rob 7.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 166; Assessment Report 5055.

KID (93K-3) (Fig. D, No. 36)

LOCATION: Lat. 54° 24' Long. 124° 52' (93K/7W)
OMINECA M.D. Twenty-two and one-half miles north-northeast of Endako village, between 3,000 and 3,500 feet elevation.
CLAIMS: KID 1 to 8, 10, 13 to 20, 25, 27 to 34, 36, 37, 39 to 48, 51, 63, 65, 67, 85.
OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.
METAL: Molybdenum.
DESCRIPTION: Molybdenite occurs in a quartz vein stockwork; pyrite occurs in the quartz veins and is disseminated in the host rock. The molybdenum-quartz vein stockwork cuts a fine-grained massive biotite-quartz monzonite stock which is intrusive into Cache Creek argillite.
WORK DONE: Percussion drilling, 26 holes totalling 6,670 feet on Kid 1, 3, 4, 5, 6, 8, 14, and 16.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 332; Assessment Report 5119.

SNOWBIRD (93K-36) (Fig. D, No. 35)

LOCATION: Lat. 54° 27′ Long. 124° 30′ (93K/7E, 8W)
OMINECA M.D. Ten miles west of Fort St. James, at Kasaan Bay, on the southwest side of Stuart Lake, at approximately 2,500 feet elevation.

CLAIMS: SNOWBIRD, EBBA, GRAYBIRD, TOPSIDE, SHAFT Fraction, BAY 1, 2, 4 to 8, 11 to 23, BAY 24 Fraction.

OWNERS: T. E. Neilson and F. R. Jobin.

OPERATOR: WESTWIND MINES LTD., 440, 890 West Pender Street, Vancouver V6C 1J9.

METALS: Gold, antimony.

DESCRIPTION: Cache Creek Group argillites and slates contain quartz-carbonate zones with sulphides. Some serpentine bodies were noted in drill core.

WORK DONE: Surface diamond drilling, five BQ holes totalling 910 feet on Snowbird and Shaft Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 166; Assessment Report 5136.

PINCHI LAKE MINE (93K-49) (Fig. D, No. 101)

By A. D. Tidsbury

LOCATION: Lat. 54° 38′ Long. 124° 26′ (93K/9W)
OMINECA M.D. Fourteen miles north-northwest of Fort St. James, on the northeast side of Pinchi Lake.

CLAIMS: Twenty-five Crown-granted claims, 93 located claims including WOLF, SAM, WIT, NAB, BAN, and 71 claims under option from Highland Mercury Mines Limited including CIN and MERC.

OWNER: COMINCO LTD., Box 220, Fort St. James.

METAL: Mercury.

DESCRIPTION: Cinnabar occurs as fracture and solution cavity fillings in breccia zones near faults in dolomitized linestone of the Cache Creek Group.

WORK DONE:

During the year ore was obtained from two underground horizons in the main zone orebody using cut and fill mining methods with trackless equipment. Some production was obtained from pillar extraction on the lowest level. Fill is hydraulically emplaced deslimed tailings.

Mining details included: development advance, 1,782 feet; exploration diamond drilling, 4,819 feet; blasthole drilling, 271,355 feet; explosives consumed, 136.8 tons.

Employment for the year totalled 58 persons.

A standby diesel electric set has a rated capacity of 250 kilovolt-amperes. Horsepower connected totalled 4,117. Power consumed amounted to 10,228,000 kilowatt-hours.

Revisions included major changes and construction in the mine ventilation system and a start on the low-level decline, from 2,200 feet elevation to the proposed lower level development.

Reclamation involved the seeding of one waste dump and the on-going fertilizer-maintenance testing of existing plots.

Major equipment at the mine included: three Wagner ST-5A scooptrams, one Wagner ST-2B scooptram, three Gardner-Denver drill jumbos, three Euclid R-13 ore trucks, two Gardner-Denver portable compressors, one Broomwade portable compressor, one Case W9B forklift, and one Austin western pacer 100 grader.

A St. John Ambulance first-aid certificate was awarded to nine course graduates. The Pinchi Lake mine-rescue team won the underground Provincial mine-rescue competition and competed in the Dominion competition at Whitehorse.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 167; 1972, p. 364; 1973, p. 333.

SMITHERS 93L

SAM GOOSLY (93L-1) (Fig. D, No. 38)

LOCATION: Lat. 54° 11′ Long. 126° 16′ (93L/1W)
OMINECA M.D. About 25 miles southeast of Houston, 4 miles east of Goosly Lake, at approximately 4,200 feet elevation.

CLAIMS: SG 1 to 52, 54, 56, 61 to 64, 66, SG 1 to 5 Fractions, TAN 1 to 7, T 1 to 41, 46 to 53, 66 to 199, 202 to 245, NET 1 to 3 Fractions, REV 1 to 15, GAUL 1 to 20.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: EQUITY MINING CAPITAL LIMITED, 908, 1111 West Hastings Street, Vancouver V6E 2J3.

METALS: Copper, silver.

DESCRIPTION: A massive sulphide deposit occurs within a pyroclastic division of the Hazelton Group. Tetrahedrite and chalcopyrite mineralization contains significant amounts of silver, copper, gold, and antimony.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet on SG 26, 28; geophysical survey, 8 line-miles, 200-foot grid spacing covering SG 17, 19, 21, 28, 30, 32; surface diamond drilling, 32 holes totalling 8,200 feet on SG 28; trenching, 7,000 feet on SG 25, 26, and 28.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 335-338; Assessment Report 5346.

DG (Fig. D, No. 37)

LOCATION: Lat. 54° 11′ Long. 126° 19′ (93L/1W)
OMINECA M.D. Approximately 20 miles southeast of Houston, one-half mile north of the eastern end of Goosly Lake.

CLAIMS: DG 1 to 4, 10, 12, 14, 41, 42.

OWNER: PAYETTE RIVER MINES LIMITED, 1840, 777 Hornby Street, Vancouver.

DESCRIPTION: Percussion holes intersected Hazelton dacite and Eocene volcanic rocks. Overburden varies from 10 to 25 feet.

(93L/2E)

WORK DONE: Percussion drilling, four holes totalling 820 feet on DG 1, 3.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 366; Assessment Report 5195.

HDP (Fig. D, No. 39)

LOCATION: Lat. 54° 05' Long. 126° 40' (93L/2E)
OMINECA M.D. Two miles northeast of the east end of Owen Lake.

CLAIMS: HDP 1 to 24, 26, 27, HDP 25 Fraction.

OWNER: CONQUEST EXPLORATION LTD., 3000 Royal Centre, 1050 West Georgia Street, Vancouver V6E 3R3.

WORK DONE: Linecutting, 12.8 miles of grid.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 338; Assessment Report 5020.

SILVER QUEEN (NADINA) (93L-2) (Fig. D, No. 40)

LOCATION: Lat. 54° 05' Long. 126° 44' (93L/2E)
OMINECA M.D. Twenty-two miles south of Houston, 1 mile east of Owen Lake, at approximately 2,700 feet elevation.

CLAIMS: NADINA, OWL, NAD, DOUBLE X, BIG MOOSE, OL, TIP TOP, HAWK, ANGUS, RB, and other located claims plus 17 Crown-granted claims, totalling approximately 144.

OWNER: Nadina Explorations Limited.

OPERATOR: BRADINA JOINT VENTURE, 2960, 205 Fifth Avenue SW., Calgary, Alta.

METALS: Gold, silver, copper, zinc, lead, cadmium.

DESCRIPTION: The geology, exploration, and development history of the Silver Queen mine has been reviewed in detail in *Geology, Exploration, and Mining in British Columbia,* 1969 and 1970.

WORK DONE: Underground work, 520 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 338, 339.

POPLAR (93L-239) (Fig. D, No. 41) By N. C. Carter

LOCATION: Lat. 54° 01' Long. 126° 58' (93L/2W; 93E/15W)
OMINECA M.D. Thirty miles south-southwest of Houston, on the north side of Tagetochlain Lake, at approximately 3,000 feet elevation.

CLAIMS: POPLAR 1 to 20, 33, 35, 37, 48 to 96, POPLAR 1 and 2 Fractions, TAG 1 to 142, 145 to 186, 195 to 212, 229 to 236, TAG 1 and 2 Fractions, DON 1 to 15, 26 to 36, 45 to 54, RAM 1 to 30, PINE 1 to 22, LAKE 1 to 36, DAVE 1, 2, 4, and 5 Fractions.

OWNERS: F. Onucki, C. Critchlow, and M. Callaghan.

OPERATOR: UTAH MINES LTD., 1600, 1050 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION:

This porphyry copper prospect was originally located for El Paso Mining and Milling Company by M. Callaghan, F. Onucki, and C. Critchlow in 1971. In 1971 and 1972, El Paso carried out soil geochemistry, geological mapping, and bulldozer trenching on the property. Results were disappointing and the property was subsequently acquired by the original locators. Limited drilling and hand trenching were done on the claims in mid-1974, and the property was optioned by Utah Mines Ltd. in late September. Geochemical and geophysical surveys and diamond drilling continued to near year-end.

Original soil samples yielded anomalous copper values distributed around a crudely circular area 1,500 metres (5,000 feet) in diameter. Trenching, done to test some of these anomalous areas, exposed hornfelsed volcanic and sedimentary rocks cut by dykes of feldspar porphyry. All of these rocks exhibit features typical of a quartz-sericite-pyrite or phyllic alteration zone. Pyrite and minor chalcopyrite are contained in closely spaced fractures.

Work by one of the owners in 1974 in the central part of the claim group resulted in the discovery of sub-outcrops of biotite-feldspar porphyry and hornfels containing copper mineralization (over an 1,800-square-metre area). Three directions of closely spaced fractures are evident and each contains finely disseminated chalcopyrite and some pyrite.

Four hundred metres (1,300 feet) southeast of this zone, intensely fractured hornfels is exposed in a creek canyon. Abundant pyrite occurs in narrow fractures and in northerly striking quartz veins up to 30 centimetres (12 inches) wide. Old claim posts nearby suggest that this zone was investigated many years ago. The hornfels exhibits significant bleaching marginal to the closely spaced (one per 5 centimetres) fractures. Just south of this zone the hornfels is capped by a small remnant of non-mineralized Tertiary basalt.

WORK DONE: Owners – limited drilling and hand trenching; Utah Mines Ltd. – surface geological mapping, 1 inch equals 200 feet covering Poplar 5-8; IP and magnetometer survey, 12 line-miles, 500-foot grid spacing covering Poplar 1-20; surface diamond drilling, four holes totalling 3,074 feet on Poplar 3 and 5; claims surveyed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 373; Assessment Report 3665.

RD (93E-83) (Fig. D, No. 21)

LOCATION: Lat. 53° 59′ Long. 127° 34′ (93E/13E; 93L/4E)
Report on this property in section 93E/13E.

HOPE (93L-54) (Fig. D, No. 43)

LOCATION: Lat. 54° 07′ Long. 127° 51′ (93L/4W)
OMINECA M.D. Two and one-half miles south of the junction of Burnie and Clore Rivers, straddling Clore River, at approximately 3,000 feet elevation.

CLAIMS: CHLORE 1 to 8.

(93L/6W)

OWNER: CANADIAN NICKEL COMPANY LIMITED, Field Exploration, Copper Cliff, Ont.

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite mineralization occurs in a granodiorite stock which intrudes Hazelton volcanic and sedimentary rocks.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; IP survey, 2.8 line-miles, 1,000-foot grid spacing; geochemical survey, 118 rock samples and 219 soil samples, 500-foot grid spacing, 4.3 line-miles; linecutting covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, Map 69-1.

MSJ (93L-241) (Fig. D, No. 45)

LOCATION: Lat. 54° 25' Long. 127° 23' (93L/6W)
OMINECA M.D. Twenty-seven miles south-southwest of Smithers, 3.25 miles southwest of the south end of Mooseskin Johnny Lake, at approximately 3,600 feet elevation.

CLAIMS: MSJ 1 to 46.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

METAL: Copper.

DESCRIPTION: Disseminated pyrite, traces of malachite, and chalcopyrite occur in altered quartz monzonite porphyry.

WORK DONE: IP survey, 20 line-miles, 1,000-foot grid spacing covering all claims.

REFERENCE: Assessment Report 5208.

LUNLIK (93L-240) (Fig. D, No. 44)

LOCATION: Lat. 54° 23' Long. 127° 05' (93L/6E)
OMINECA M.D. On Flat Top Mountain, near the headwaters of Houston Tommy Creek, at approximately 6,000 feet elevation.

CLAIMS: LUNLIK 3 to 36.

OWNERS: Carl Szydlik and E. Lund.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1060, 1055 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Fine to medium-grained quartz diorite contains chalcopyrite in fractures with quartz and orthoclase. Rhyolitic fragmental rocks contain pyrite.

WORK DONE: Geophysical survey, 6.6 line-kilometres, 120 by 30-metre grid spacing covering Lunlik 17-20; geochemical soil survey, 229 samples, 120 by 30-metre grid spacing covering Lunlik 17-20, 25, 26; surface diamond drilling, six holes totalling 813.5 metres on Lunlik 17, 18, 19, and 26.

REFERENCE: Assessment Report 5094.

STAR, KLONDIKE (93L-10) (Fig. D, No. 46)

LOCATION: Lat. 54° 22′ Long. 126° 34′ (93L/7E)
OMINECA M.D. Four miles southeast of Houston, on the north side of Dungate Creek, at approximately 3,150 feet elevation.

CLAIMS: HOT 1 to 14, HOT 1 to 6 Fractions, CU 2, 4, 6, 8, 9 to 16, 18, 19, 21, 25, 27, 29, CU 1 and 2 Fractions.

OWNER: Maverick Mountain Resources Limited.

OPERATOR: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, molybdenite, and pyrite mineralization is associated with an altered quartz feldspar porphyry plug which intrudes Hazelton Group volcanic rocks.

WORK DONE: Percussion drilling, six holes totalling 1,800 feet on Hot 1, 9, and Hot 1 Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 384-390; Assessment Report 4954.

APEX (93L-245, 246, 247) (Fig. D, No. 73)

LOCATION: Lat. 54° 26′ Long. 126° 26′ (93L/8W)
OMINECA M.D. Nine miles east-northeast of Houston, 2 miles northeast of Aiken Creek, at approximately 3,000 feet elevation.

CLAIMS: APEX 1 to 22.

OWNERS: John M. McAndrew and Marie-Paule F. McAndrew.

OPERATOR: JOHN M. McANDREW, 212, 14840 – 105th Avenue, Surrey V3R 1R5.

METALS: Copper, lead, zinc, barite, strontium.

DESCRIPTION: The property is underlain mainly by maroon and green andesite of the Hazelton Group. Minor argillite and agglomerate occur in the west-central part. A small area of basalt in the east-central part may be intrusive in part. Rhyolite in the east and southwest is fine to medium-grained and probably is intrusive. The Road showing on Apex 9 consists of disseminated chalcopyrite, chalcocite, galena, malachite, and azurite adjacent to barite veins in maroon andesite. The Pond showing at the south end of the pond on Apex 8 consists of magnetite, chalcopyrite, bornite, malachite, and calcite filling fractures in basalt. On Apex 18 a 300-foot section of basalt in the creek bed carries chalcopyrite, chalcocite, and bornite in quartz veins, fractures, and disseminations.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, approximately 10 line-miles; geochemical soil survey, 132 soil samples taken at 100 by 600-foot grid spacing covering all claims.

REFERENCE: Assessment Report 5288.

JILL (93L-242) (Fig. D, No. 47)

LOCATION: Lat. 54° 44' Long. 126° 14' (93L/9E)
OMINECA M.D. Six miles southwest of Topley Landing, immediately north of the Toplev Landing road, at approximately 3,100 feet elevation.

CLAIMS: JILL 1 to 16, JILL 1 to 6 Fractions.

OWNER: British Newfoundland Exploration Limited, Twin Peak Resources Ltd., and Cobre Exploration Limited.

OPERATOR: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 602 West Hastings Street, Vancouver V6B 1P2.

METAL: Copper.

DESCRIPTION: Pyrite and traces of chalcopyrite occur in andesites and tuffs cut by quartz latite or biotite feldspar porphyry dykes.

WORK DONE: Surface work, 31 pits covering most claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 342.

JACOB (93L-243) (Fig. D, No. 48)

LOCATION: Lat. 54° 43' Long. 126° 17' (93L/9W)
OMINECA M.D. Nine miles southwest of Topley Landing, 8,000 feet north of the east end of Baboon Lake, at approximately 3,200 feet elevation.

CLAIMS: JACOB 1 to 16, JACOB 1 to 6 Fractions.

OWNERS: British Newfoundland Exploration Limited, Twin Peak Resources Ltd., and Cobre Exploration Limited.

OPERATOR: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 602 West Hastings Street, Vancouver V6B 1P2.

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, minor chalcopyrite, molybdenite, and traces of bornite occur in altered volcanic rocks and biotite feldspar porphyry.

WORK DONE: Surface diamond drilling, three holes totalling 600 feet on Jacob 5 and 14; road construction, 1.5 line-miles covering Jacob 1, 3, 5, 14 and Jacob 2, 3 Fractions; surface work, 25 pits on Jacob 5, 7, 14, 16 and Jacob 1, 2, 4, 5 Fractions.

THEZAR (93L-190, 191) (Fig. D, No. 49)

LOCATION: Lat. 54° 45' Long. 126° 20' (93L/9W, 16W)
OMINECA M.D. Nine miles southwest of Topley Landing, 1 mile north of Lennac Lake, at approximately 3,000 feet elevation.

CLAIMS: THEZAR 1 to 132.

OWNER: Amax Exploration, Inc.

OPERATORS: AMAX EXPLORATION, INC., LUC SYNDICATE, STANDARD OIL OF BRITISH COLUMBIA, c/o 601, 535 Thurlow Street, Vancouver V6E 3L6.

METALS: Copper, (molybdenum).

(93L/10E)

DESCRIPTION: Chalcopyrite, pyrite, minor molybdenite, and magnetite occur as disseminations, in fractures, and in quartz vein stockworks within and marginal to a Late Cretaceous biotite-quartz-feldspar porphyry stock which intrudes Hazelton Group andesite and andesite breccia.
WORK DONE: Surface diamond drilling, five holes totalling 3,017 feet on Thezar 52, 54, 73, and 75.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 344; Assessment Report 5031.

DECEPTION (Fig. D, No. 50)

LOCATION: Lat. 54° 13′ Long. 126° 39′ (93L/10E)
OMINECA M.D. Sixteen miles west of Telkwa, surrounding Deception Lake.
CLAIMS: TAK 1 to 40, DEK 1 to 40, ZUK 1 to 40.
OWNER: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver V6B 1L8.
DESCRIPTION: The claims are underlain by Hazelton volcanic rocks.
WORK DONE: IP survey, 13 line-miles, one-quarter-mile grid spacing covering Zuk 22-26, 35-38 and Tak 1-7, 10, 17-19, 25-27, 36, 37; geochemical soil survey, 253 samples, 13 line-miles, one-quarter-mile grid spacing covering same claims.

BILL, JO (93L-244) (Fig. D, No. 51)

LOCATION: Lat. 54° 36′ Long. 127° 03′ (93L/11E)
OMINECA M.D. Seven miles due south of Telkwa, at approximately 4,000 feet elevation.
CLAIMS: BILL 3 to 6, 11, 12, 25 to 48, JO 1 to 12.
OWNERS: Anglo-Bomarc Mines Ltd. and Heinz Langner.
OPERATOR: ANGLO-BOMARC MINES LTD., 301, 540 Burrard Street, Vancouver.
METAL: Copper.
DESCRIPTION: The property is underlain by Hazelton Group andesite.
WORK DONE: Magnetometer survey, 38.5 line-miles, 400 by 200-foot grid spacing and geochemical soil survey, 961 samples, 400 by 200-foot grid spacing, 36 line-miles covering Jo 1-12 and Bill 3, 5, 10, 11, 25-48.
REFERENCES: Assessment Reports 5156, 5162.

HUBERT (93L-226) (Fig. D, No. 74)

LOCATION: Lat. 54° 38′ Long. 127° 02′ (93L/11E)
OMINECA M.D. Four miles south of Telkwa, at approximately 3,500 feet elevation.
CLAIMS: HUBERT 1 to 4, TEX 1 to 10, BEV 1 to 10, JIM 1 to 8.
OWNER: Maharaja Minerals, Limited.

(93L/14W)

OPERATOR: CUSTOMER MINING SERVICES LIMITED, Box 533, Station A, Vancouver.

METALS: Copper, silver.

DESCRIPTION: The claims are underlain by Hazelton Group volcanic rocks.

WORK DONE: Trenching and stripping, 10,000 cubic feet on Hubert 1-4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 346.

GLACIER GULCH (YORKE-HARDY) (93L-107 to 110) (Fig. D, No. 52)

LOCATION: Lat. 54° 49' Long. 127° 18' (93L/14W)
OMINECA M.D. Glacier Gulch, east side of Hudson Bay Mountain, 5 miles northwest of Smithers, between 2,000 and 7,000 feet elevation.

CLAIMS: Mineral Leases M-8 and M-81 to M-85 and 252 located claims comprising C, D, E, F, H, JAY, J, K, L, M, R, S, T, EX, EXTENSION, and Y.

OWNER: CLIMAX MOLYBDENUM CORPORATION OF BRITISH COLUMBIA, LIMITED, Box 696, Smithers.

METALS: Molybdenum, tungsten.

DESCRIPTION: Molybdenite, scheelite-powellite, wolframite, and chalcopyrite occur in quartz vein sheetings and stockworks cutting Hazelton volcanic and younger intrusive rocks. Hazelton Group volcanic rocks and Bowser Group sedimentary rocks are cut by three ages of intermediate to acidic intrusive rocks.

WORK DONE: Surface diamond drilling, three holes totalling 478 feet on Jay 4 and 8; rehabilitation of road (ditching, grading, etc.).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 347; Assessment Report 5041.

REISETER (93L-134) (Fig. D, No. 102)

LOCATION: Lat. 54° 55' Long. 127° 10' (93L/14E)
OMINECA M.D. Nine miles north of Smithers, on the south side of Reiseter Creek.

CLAIMS: REISETER 1 to 8, 11, 12.

OWNERS: Taseko Mines Limited and Channel Copper Mines Limited.

OPERATOR: CHANNEL COPPER MINES LIMITED, 248 Second Avenue, Kamloops.

METALS: Antimony, copper, molybdenum, silver, lead, zinc.

DESCRIPTION: Several parallel, north-northeast-striking quartz-carbonate-sulphide veins cut argillaceous sedimentary rocks. Stibnite is the principal sulphide mineral. Southeast of the antimony-bearing veins, several dykes of quartz feldspar porphyry containing minor chalcopyrite and molybdenite intrude argillaceous siltstones.

WORK DONE: 1973 – frequency-domain IP survey, 5.6 line-miles covering Reiseter 2-10; surface diamond drilling, two BQ holes totalling 873 feet on Reiseter 4 and 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 347; Assessment Reports 5011, 5012.

BIG ONION (CIMBRIA) (93L-124) (Fig. D, No. 56)

LOCATION: Lat. 54° 47′ Long. 126° 54′ (93L/15W)
OMINECA M.D. Eleven miles east of Smithers, on the south slope of Astlais Mountain, between 3,500 and 5,000 feet elevation.

CLAIMS: JACK 1 to 36, JACK 0 Fraction, JACK 1 to 17 Fractions, JILL 1 to 6, JILL 1, 2, and 5 Fractions, RALPH 10, 12, 14, 16, 18, AL 5 to 14.

OWNER: Twin Peak Resources Ltd.

OPERATOR: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, chalcocite, pyrite, and molybdenite occur in quartz diorite porphyry and quartz feldspar porphyry which intrude Hazelton Group andesites. Mineralization is mainly associated with quartz diorite porphyry Hazelton Group contact.

WORK DONE: Magnetometer survey, 800 by 200-foot grid spacing; surface diamond drilling, four holes totalling 1,500 feet on Jack 3 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 164.

CRONIN MINE (93L-127) (Fig. D, No. 57)

By J. F. Hutter

LOCATION: Lat. 54° 55′ Long. 126° 48′ (93L/15W)
OMINECA M.D. Five and one-half miles west of Chapman Lake, at the headwaters of Cronin Creek, between 4,700 and 5,300 feet elevation.

CLAIMS: SUNFLOWER FR. (Lot 7417), SUNFLOWER (Lot 7418), HOMESTAKE (Lot 1859A), BONANZA (Lot 1860A), EUREKA (Lot 1861A), LUCKY STRIKE (Lot 1862A), BABINE CHIEF (Lot 1863A), BULKLEY PIONEER (Lot 1864A), JIM FR., KW 1 to 3, SUNRISE 7, DEL 1 to 12, VIEW 1 to 8, MILL 1 and 2.

OWNER: HALLMARK RESOURCES LTD., 221 – 12th Street, New Westminster; H. J. Wilson, mine manager.

METALS: Lead, zinc, gold, silver, cadmium, bismuth (production shown on Table 6).

DESCRIPTION: The mineral occurrence is related to a stock-like body of rhyolite at its contact with adjacent argillaceous sedimentary rocks. The mineralization consists of sphalerite and galena with relatively minor pyrite, either in quartz veins or in massive veins, breccia zones, or fracture fillings in rhyolite with little quartz. The major veins strike southwest-northeast and dip 45 to 65 degrees to the northwest. The silver values are directly proportional to lead values.

WORK DONE:

Underground development during the year was confined to No. 1 level and consisted of approximately 160 feet of drifting on No. 2 vein. Two sections of the vein, separated by 60 feet of dyke rock, are reported to have produced the following assays: width, 8.75 feet; zinc, 6.50 per cent; lead, 7.90 per cent; silver, 16.85 ounces per ton over a length of 20 feet.

The face of the drift was in good ore at the end of the season.

The mill operated from July 10 to September 12. The average grade of ore to the mill was reported as: zinc, 12 per cent; lead, 7 per cent; silver, 12 ounces per ton; gold, 0.05 ounce per ton. Production was primarily on No. 1 level.

An average of 14 persons was employed at the mine during the summer season.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 100; 1970, p. 164; 1971, p. 178; 1972, pp. 420, 421; 1973, pp. 347, 348.

DORIS (Fig. D, No. 54)

LOCATION: Lat. 54° 57' Long. 126° 35' (93L/15E)
OMINECA M.D. One mile west of Doris Lake, at approximately 3,000 feet elevation.

CLAIMS: DORIS 1 to 20.

OWNERS: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver and HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

DESCRIPTION: The claims are underlain by sedimentary and volcanic rocks of the Hazelton Group.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; IP survey, 2.12 line-miles covering Doris 3, 4, 6, 8, 13-18, 20; surface diamond drilling, one hole totalling 408 feet on Doris 6.

BOOM (Fig. D, No. 55)

LOCATION: Lat. 54° 59' Long. 126° 34' (93L/15E)
OMINECA M.D. One and one-half miles north of Doris Lake, at approximately 3,000 feet elevation.

CLAIMS: BOOM 1 to 12.

OWNERS: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver and HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

DESCRIPTION: The claims are underlain by sedimentary and volcanic rocks of the Hazelton Group.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; IP survey, 1.5 line-miles (reconnaissance along road) covering Boom 1-3, 8, 9, 11; surface diamond drilling, 444 feet on Boom 11; percussion drilling, three holes totalling 450 feet on Boom 3, 8, and 9.

BRIS (Fig. D, No. 53)

LOCATION: Lat. 55° 00' Long. 126° 39' (93M/2E; 93L/15E)
Report on this property in section 93M/2E.

GRANISLE MINE (93L-146) (Fig. D, No. 103)

By J. F. Hutter

LOCATION: Lat. 54° 56.5′ Long. 126° 09.5′ (93L/16E)
OMINECA M.D. On McDonald Island, 9 miles north of Topley Landing.

CLAIMS: BEA 1 to 6 (Lots 7665, 7666, 7670 to 7672, 7679), ARLEN 1 to 4 (Lots 7673, 7664, 7663, 7668), BLACK BEAR 1 to 3 (Lots 7662, 7661, 7667), COON 1 (Lot 7686), DEER FR. (Lot 7674), COON FR. (Lot 7684), ELK (Lot 7675), FOX (Lot 7676), LAKE 1 and 2 (Lots 7682, 7683), LYNX FR. (Lot 7678), MOUSE FR. (Lot 7680), NORA 1 to 5 (Lots 7656 to 7660), NORA 6 FR. (Lot 7669), OTTER 1 and 2 (Lots 7685, 7681), WOLF FR. (Lot 7677) Crown-granted claims and 170 located claims.

OWNER: GRANISLE COPPER LIMITED, 1111 West Georgia Street, Vancouver; mine office, Granisle; E. M. Berthelsen, mine manager.

METAL: Copper (production shown on Table 6).

DESCRIPTION: Copper mineralization is associated with a series of porphyry intrusions. The economic minerals are chalcopyrite and bornite with minor gold and silver. A pyrite halo is peripheral to the copper orebody.

WORK DONE:

Open-pit mining during the year amounted to 4,860,651 tons of ore and 7,064,601 tons removed as waste.

Mining proceeded in the central portion of the pit from bench 10 in January to bench 14 at 2,155 feet elevation by December. A new cut was also started on the south and northeast wall. This cut was taken from bench 6 to bench 9 at 2,330 feet elevation by December. Although the pit was deepened and a new wall cut started, there was no indicated increase of water seepage into the pit. The present pit bottom at bench 14 is now 145 feet below the level of Babine Lake.

The majority of waste removed was hauled to dumps on the east side of McDonald Island. Some of the waste was utilized for tailings dam construction while causeway and road construction consumed the remainder.

During the latter part of 1974, eight Terex R-50 trucks were replaced by six Lectra Haul M-85 units of 100-ton capacity.

The mill treated 4,373,075 tons of ore having an average grade of 0.462 per cent copper. Concentrate produced amounted to 59,440 tons.

Major construction projects for the year included modifications to the primary crusher bridge to accommodate the 100-ton Lectra Haul trucks, an addition to the tailings pumping bay to house a second-stage pump, and a start was made on the construction of additional concentrate storage facilities at Topley rail siding.

All reclaimed areas were given fertilizer treatments in the spring and fall. In addition, 4 acres of tailings pond and 4 acres of overburden were reclaimed and seeded. A nursery for the propagation of deciduous trees was established.

Regular water pollution sampling and dust emission surveys were carried on during the year. Four maintenance crews were employed solely on dust suppression in the crusher with the result that dust counts have been significantly reduced.

An average of approximately 300 persons is employed at the mine.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, pp. 97-99; 1967, pp. 104, 105; 1968, pp. 132, 133; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, pp. 114, 115; 1970, pp. 166, 167; 1971, pp. 178-183; 1972, p. 425; 1973, p. 351.

BELL MINE (NEWMAN) (93M-1) (Fig. D, No. 104)

LOCATION: Lat. 55° 00′ Long. 126° 14′ (93M/1E; 93L/16E)
Report on this property in section 93M/1E.

HAZELTON 93M

BELL MINE (NEWMAN) (93M-1) (Fig. D, No. 104) By J. F. Hutter

LOCATION: Lat. 55° 00′ Long. 126° 14′ (93M/1E; 93L/16E) OMINECA M.D. At the north end of Newman Peninsula on Babine Lake.

CLAIMS: Mineral Leases M-134 and M-135 and 98 located claims and fractions, including NEWMAN, LINDA, and LAD.

OWNER: NORANDA MINES, LIMITED, Bell Copper Division, Box 2000, Granisle; W. A. Allan, mine manager.

METAL: Copper (production shown on Table 6).

DESCRIPTION: Chalcopyrite mineralization, with pyrite, pyrrhotite, and some sphalerite and chalcocite, is associated with a stock-like body of feldspar porphyry. This porphyry intrudes sedimentary and fragmental volcanic rocks within a regional synclinal structure.

WORK DONE:

Open-pit mining during the year amounted to 4,587,042 tons of ore. The mill treated 4,500,998 tons of ore for a daily average of 12,322 tons and produced 78,952 tons of copper concentrate. Waste (including overburden) totalled 1,995,880 tons.

Major open-pit equipment consisted of one BE-45R electric drill, two P&H 1600 electric shovels, ten Terex 65-ton trucks, two M-85 Lectra Haul trucks, one Caterpillar 992 loader, two Caterpillar D-8 bulldozers, one Caterpillar 824-B wheel bulldozer, and one Caterpillar 14-E grader.

During 1974, installation of additional facilities included construction of enclosures around dust collectors to prevent freezing, installation of a dust collector for the lime mixing tank, extension of the powerline to tailings dam seepage ponds, installation of a seepage pump in No. 1A pond, and installation of an additional reclaim pump.

Ten additional houses and two 6-unit row houses were completed at Granisle village for employee accommodation.

At year end a total of 280 persons was employed at the operation.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1965, pp. 99-102; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 114; 1970, p. 170; 1971, pp. 185, 186; 1972, pp. 426-428; 1973, pp. 352, 353.

OFF, DDT (93M-4) (Fig. D, No. 59)

LOCATION: Lat. 55° 04′ Long. 126° 19′ (93M/1W)
OMINECA M.D. The property is situated on the southeast flank of Old Fort Mountain, between 3,000 and 3,500 feet elevation, approximately 40 miles northeast of Smithers.

CLAIMS: OFF 1 to 8, 15 to 18, DDT 5 to 14, 19 to 40, RAID 1 to 14.

OWNER: Wesfrob Mines Limited.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, sparse molybdenite, and rare bornite occur as disseminations, in fracture fillings, and as replacements of mafic minerals in three small, discontinuous, low-grade zones in dykes of biotite feldspar porphyry and quartz monzonite.

WORK DONE: IP survey, 12.6 line-miles, 300-foot grid spacing covering DDT 5, 7, 8, 19-30, 33-36, 38, 40, RAID 7, 9, and OFF 1, 2, 4; geochemical soil survey, 355 samples, 24.6 line-miles, 400 by 800-foot grid spacing covering DDT 5-10, 12, 19-30, 33-36, 38, 40 and OFF 1-6, 17, 18; surface diamond drilling, six holes totalling 1,011 feet on OFF 3, 4, 5, and DDT 10; linecutting, 12 miles of grid covering same claims as IP survey; road construction, one-half mile on OFF 3-5 (drill access).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 353; Assessment Report 5058.

TERI (Fig. D, No. 60)

LOCATION: Lat. 55° 14′ Long. 126° 24′ (93M/1W)
OMINECA M.D. Thirteen miles north-northeast of Smithers Landing, 1 mile west of Morrison Lake, at approximately 3,500 feet elevation.

CLAIMS: TERI 1 to 12, TERI 1 to 4 Fractions.

OWNER: R. Woolverton.

OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

DESCRIPTION: Sedimentary rocks (siltstones) have been intruded by biotite feldspar porphyry.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 9 line-miles, 400 by 200-foot grid spacing; geochemical soil survey, 225 samples, 400 by 200-foot grid spacing, 9 line-miles covering all claims.

DOROTHY (HAUT) (93M-9) (Fig. D, No. 58)

LOCATION: Lat. 55° 15′ Long. 126° 10′ (93M/1E, 8E)
OMINECA M.D. Three miles east of the south end of Nakinilerak Lake, at approximately 3,000 feet elevation.

(93M/2E)

CLAIMS: DOROTHY 29, 37 to 48, 501, 503, 505, 529 to 534, 658 to 661, DOROTHY 5 to 8, 71 to 73, 75 Fractions.

OWNERS: Twin Peak Resources Ltd. and Ducanex Resources Limited.

OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs in a biotite feldspar porphyry stock.

WORK DONE: Geochemical soil survey, 120 samples, 800 by 200-foot grid spacing, 4 line-miles covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 184.

BRIS (Fig. D, No. 53)

LOCATION: Lat. 55° 00′ Long. 126° 39′ (93M/2E; 93L/15E)
OMINECA M.D. Three miles north-northeast of the north end of Chapman Lake, at approximately 3,000 feet elevation.

CLAIMS: BRIS 1 to 94.

OWNERS: NORANDA EXPLORATION COMPANY, LIMITED, Box 2380, Vancouver and HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver.

DESCRIPTION: Pyrite and minor chalcopyrite occur in altered intrusive rocks and sedimentary and volcanic rocks of the Hazelton Group.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Bris 1-64; IP survey, 4.85 line-miles (reconnaissance along roads) covering Bris 3, 7, 8, 11, 12, 14-16, 25, 26, 30-33, 39, 41, 43, 51, 52; surface diamond drilling, one hole on Bris 41; percussion drilling, six holes on Bris 33, 40, 41, and 43.

HOL (93M-145) (Fig. D, No. 61)

By T. G. Schroeter

LOCATION: Lat. 55° 03′ Long. 126° 45′ (93M/2)
OMINECA M.D. Nine miles west of Smithers Landing, 1 mile southwest of the south end of Holland Lake, at approximately 2,800 feet elevation.

CLAIMS: HOL 1 to 38.

OWNER: W. R. Bacon.

OPERATOR: LUC SYNDICATE, 1720, 1055 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION:

Drill core from the two holes was examined in March of 1974. At least two intrusive units (sills or dykes) consisting of biotite feldspar porphyry and quartz monzonite intrude predominantly volcanic tuffs of the Hazelton Group. The Hazelton Group rocks are well bedded and exhibit only minor mineralization consisting of hairline fracture fillings of pyrrhotite and trace chalcopyrite. Mineralization is mainly confined to the intrusive units and consists of both disseminated and fracture filling chalcopyrite and pyrrhotite. Trace amounts of molybdenite were observed on fractures. The ratio of chalcopyrite to pyrrhotite is almost 1:1, but, in general, chalcopyrite predominates. There is an almost complete lack of pyrite. There is a lack of intense fracturing.

(93M/2W)

WORK DONE: Surface diamond drilling, two holes totalling 1,186 feet on Hol 3 and 5; road construction, 4 miles on Hol 1, 2, 3, 5, and 33.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 355.

TANYA (Fig. D, No. 62)

LOCATION: Lat. 55° 03′ Long. 126° 49′ (93M/2W)
OMINECA M.D. Twelve miles west of Smithers Landing, at approximately 3,100 feet elevation.

CLAIMS: TANYA 1 to 12, TANYA 1 to 4 Fractions.

OWNERS: Selco Mining Corporation Limited and Twin Peak Resources Ltd.

OPERATOR: SELCO MINING CORPORATION LIMITED, 55 Yonge Street, Toronto, Ont.

DESCRIPTION: Pyrite occurs in quartz latite and in graphite zones. Intrusive and extrusive volcanic and subvolcanic rocks include some gabbro.

WORK DONE: Surface diamond drilling, two holes totalling 403 feet on Tanya 9 and 4 Fraction; road construction, 6 miles.

SILVER STANDARD MINE (93M-49) (Fig. D, No. 105)

By J. F. Hutter

LOCATION: Lat. 55° 19′ Long. 127° 37.5′ (93M/5E)
OMINECA M.D. Five and one-half miles north of Hazelton, on Mount Glen, at 1,500 feet elevation.

CLAIMS: ALMO, LEADVILLE, STANDARD, SILVER STANDARD, SKAGWAY, GLEN MOUNTAIN (Lots 2259 to 2264), CANADIAN KING (Lot 2409), and BLACK PRINCE (Lot 2411) Crown-granted claims.

OWNER: Silver Standard Mines Limited.

OPERATOR: GEORGE BRAUN, Hazelton.

METALS: Gold, silver, lead, zinc, cadmium (production shown on Table 6).

DESCRIPTION: Banded and massive galena, sphalerite, and tetrahedrite with pyrite, arsenopyrite, and quartz ganque occur in a vein system of 16 parallel veins in (mainly) tuffaceous sandstones of Cretaceous age.

WORK DONE:

Surface work during the year involved retimbering the main 1300 level portal and rehabilitation of access roads on the property.

Underground work was confined to stoping on the No. 10 cross-vein above the 1500 level.

A total of 230 tons of hand-sorted ore was shipped to the Trail smelter.

A maximum of three persons was employed during the year.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 111; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, pp. 98, 99; 1973, p. 357.

BARBER BILL (93M-39) (Fig. D, No. 63)

LOCATION: Lat. 55° 21′ Long. 127° 30′ (93M/5E, 6W)
OMINECA M.D. Ten miles northeast of Hazelton, in Silver Cup Basin, on the north side of Nine Mile Mountain, between 4,100 and 4,750 feet elevation.

CLAIMS: BETA 5, 7 to 20.

OWNER: R. O. Sarky.

OPERATOR: NORDIC MANAGEMENT & DEVELOPMENT LTD., 8167 Main Street, Vancouver.

METALS: Lead, zinc, silver, gold, antimony.

DESCRIPTION: Interbedded sandstone, greywacke, argillite, and shale of the Hazelton Group are intruded by a granodiorite stock of the Bulkley Intrusions. A bedding plane shear zone in greywacke is mineralized with very fine-grained jamesonite, sphalerite, galena, arsenopyrite, pyrite, and a little vein quartz. The mineralized zone dips 18 degrees to 30 degrees east, ranges in thickness from 4 inches to 4 feet, and has been exposed for 375 feet along strike.

WORK DONE: Surface geological reconnaissance mapping, 1 inch equals 200 feet covering Beta 15-20.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 175 (BILL), *Geol. Surv., Canada,* Mem. 223, pp. 29, 30; Assessment Report 5134.

SUNRISE, LEAD KING, SLOCAN, SILVER PICK (93M-43 to 46) (Fig. D, No. 64)

By J. F. Hutter

LOCATION: Lat. 55° 21′ Long. 127° 29′ (93M/6W)
OMINECA M.D. Ten miles northeast of Smithers, on the north side of Nine Mile Mountain, between 3,500 and 5,500 feet elevation.

CLAIMS: ETHEL (Lot 593), SUNSET (Lot 594), SUNRISE (Lot 595), NOONDAY (Lot 596), HIDDEN TREASURE (Lot 597), ETHEL FR. (Lot 599) Crown-granted claims and VAN 1 to 6, ALPHA 1 to 30 located claims.

OWNER: SUNRISE SILVER MINES LTD., 818 Cumberland Crescent, North Vancouver V7P 1Y4.

METALS: Silver, lead, zinc, antimony, cadmium, bismuth.

DESCRIPTION:

Nine Mile Mountain is underlain by a sequence of sedimentary rocks of Upper Jurassic and Lower Cretaceous age which are intruded by a granodiorite stock measuring 4 miles long and one-half mile wide. Mineralization encountered in both properties examined consists of silver-bearing galena, jamesonite, sphalerite, and pyrite, occurring as stringers and as blebs in quartz veins and to a lesser extent in the altered granodiorite wallrock. The quartz veins occur in east-west parallel fault fissures and in northeast cross-fissures forming a zone about 700 feet wide and about 2,000 feet along the strike from Sunrise Silver to Lead King.

WORK DONE:

A crew of four to six persons was employed during the summer. The work done consisted primarily of surface cuts on the main vein at an elevation of 5,000 feet.

Approximately 160 tons of high-grade ore has been stockpiled for shipment as of the end of 1974. Preliminary sampling is reported to indicate assays averaging: zinc, 9 per cent; lead, 28 per cent; silver, 54 ounces per ton; antimony, 5 per cent; cadmium, 0.10 per cent.

Samples on a new surface exposure across a width of 10 inches are reported as: silver, 390 ounces per ton; lead, 52 per cent; zinc, 0.4 per cent. Additional work on this vein is planned for 1975.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 430; 1973, p. 357.

NATLAN (93M-33) (Fig. D, No. 65)

LOCATION: Lat. 55° 25′ Long. 127° 17′ (93M/6W)
OMINECA M.D. Nineteen miles northeast of Hazelton, on the west slope of Natlan Peak, at approximately 5,800 feet elevation.

CLAIMS: NATLAN 1 to 52.

OWNER: CANADIAN NICKEL COMPANY LIMITED, Field Exploration, Copper Cliff, Ont.

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite occur in an acid intrusive stock which intrudes Bowser assemblage sedimentary rocks.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical rock survey, 281 samples covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, Map 69-1.

KING (93M-28, 29) (Fig. D, No. 66)

LOCATION: Lat. 55° 23′ Long. 127° 09′ (93M/6E)
OMINECA M.D. At the headwaters of Denison Creek, 4 miles west of Mount Thoen.

CLAIMS: DEN 1 to 36.

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The property is predominantly underlain by coarse-grained diorite to granite. Feldspar porphyry dykes cut the granitic rocks. Well-bedded Bowser assemblage argillites occur in the western portion of the property and also along mountain slopes. Mineralization is widespread throughout the property. Chalcopyrite, pyrite, and molybdenite occur both as hairline stringers within orthoclase veinlets and as fine disseminations in argillite and the intrusive rocks.

WORK DONE: Linecutting, 9.8 miles of grid; IP survey, 8.3 line-miles covering Den 15, 17, 19, 21, 23, 27-34, 36.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1968, pp. 112, 113; Assessment Reports 1590, 5278.

HOT (93M-124) (Fig. D, No. 67)

LOCATION: Lat. 55° 24′ Long. 127° 03′ (93M/6E)
OMINECA M.D. One mile northwest of Mount Thoen, at approximately 6,000 feet elevation.

CLAIMS: HOT 1 to 26.

OWNER: Cobre Exploration Limited.

OPERATOR: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Both diamond-drill holes were largely in hornfelsed argillaceous sedimentary rocks, cut by dykes of quartz diorite and quartz-biotite feldspar porphyry. Both drill holes bottomed in quartz diorite cut by porphyry dykes. Pyrrhotite, pyrite, chalcopyrite, and molybdenite occur in fractures, quartz veinlets, and as disseminations.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet on Hot 6 (along line of drill holes); surface diamond drilling, two holes totalling 2,146 feet on Hot 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 358; Assessment Report 5149.

RIO (UTE) (93M-15) (Fig. D, No. 106)

LOCATION: Lat. 55° 20′ Long. 126° 47′ (93M/7W)
OMINECA M.D. Thirty-seven miles east-northeast of Hazelton, on the east side of French Peak, at approximately 4,500 feet elevation.

CLAIMS: UTE 1 to 16.

OWNERS: J. SARGEANT and S. HOMENUKE, Box 991, Smithers.

METALS: Silver, lead, zinc, gold, copper (production shown on Table 6).

DESCRIPTION: Narrow silver-lead mineralization occurs in two subparallel shear zones in bedded Hazelton Group volcanic rocks. Galena, tetrahedrite, and pyrite are the main minerals present.

WORK DONE: Twenty-eight tons of hand-sorted high-grade ore was processed at the Trail smelter. Forty metres of trenching was carried out.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1956, p. 29; 1964, p. 50.

FRIDAY (Fig. D, No. 69)

LOCATION: Lat. 55° 20′ Long. 126° 20′ (93M/8W)
OMINECA M.D. Eleven miles east of Fort Babine, at the south end of Friday Lake, at approximately 3,000 feet elevation.

CLAIMS: FRIDAY 1 to 15, FRIDAY 1 to 6 Fractions.

OWNER: Twin Peak Resources Ltd.

OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

DESCRIPTION: The claims are underlain by sedimentary and volcanic rocks. Overburden covers most of the property.

(93M/8W)

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 6.5 line-miles; geochemical soil survey, 383 samples, 6.5 line-miles covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 432.

DONNA (Fig. D, No. 68)

LOCATION: Lat. 55° 22′ Long. 126° 21′ (93M/8W)
OMINECA M.D. Ten miles east-northeast of Fort Babine, 1 mile north of the north end of Friday Lake, at approximately 3,300 feet elevation.

CLAIMS: DONNA 1 to 12, DONNA 1 to 4 Fractions.

OWNER: Twin Peak Resources Ltd.

OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

DESCRIPTION: Vesicular andesites of the Hazelton Group are overlain by Tertiary basalts.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 4 line-miles, 800 by 100-foot grid spacing; geochemical soil survey, 200 samples, 800 by 100-foot grid spacing, 4 line-miles covering all claims.

PHI (93M-134) (Fig. D, No. 70)

LOCATION: Lat. 55° 38′ Long. 126° 42′ (93M/10E)
OMINECA M.D. Twenty-one miles north of Fort Babine, on the east side of Nilkitkwa River.

CLAIMS: AMIE 1 to 12, AMIE 1 to 4 Fractions.

OWNER: R. Woolverton.

OPERATOR: EVERGREEN EXPLORATIONS LTD., Box 604, Smithers.

METALS: Copper, zinc.

DESCRIPTION: Exposures of biotite feldspar porphyry occur on the claim group.

WORK DONE: 1973 – aeromagnetic survey, 48 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 193; Assessment Report 5078.

SHEL (93M-92, 132, 133) (Fig. D, No. 71)

LOCATION: Lat. 55° 57′ Long. 127° 03′ (93M/14E)
OMINECA M.D. Three miles east of the Sicintine Range, at the headwaters of Nilkitkwa River, at approximately 4,500 feet elevation.

CLAIMS: SHEL, totalling 40.

OWNER: Cominco Ltd.

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METALS: Copper, molybdenum.

DESCRIPTION: Mineralization consists of sparse chalcopyrite and molybdenite.

(93M/15E)

WORK DONE: IP survey, 11 line-miles, 800-foot grid spacing covering Shel 1-28; topography mapped; linecutting, 11 miles of grid covering Shel 1-28.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 101, 102.

DRIFTWOOD (93M-117) (Fig. D, No. 72)

LOCATION: Lat. 55° 49' Long. 126° 37' (93M/15E)
OMINECA M.D. Skutsil Knob, 75 miles north-northeast of Smithers and 15 miles northwest of Bulkley House, at approximately 5,500 feet elevation.

CLAIMS: BORNITE (Lot 5845), ESMERELDA (Lot 5844), BORNITE FR. (Lot 5855), BESSIE (Lot 5858), BELMONT (Lot 5846), BETH (Lot 5847), TRIX FR. (Lot 5859), ALDA FR. (Lot 5856) and other surveyed claims plus SP 1 to 28, totalling 44.

OWNERS: Cominco Ltd. and Craigmont Mines Limited.

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METALS: Copper, silver.

DESCRIPTION: Bornite, chalcopyrite, and tetrahedrite occur in andesitic and basaltic flows of Lower Triassic age.

WORK DONE: Surface diamond drilling, nine holes totalling 4,000 feet on Bornite and Alda Fraction; topography mapped.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 361.

MANSON RIVER 93N

MOSQUITO (93N-163) (Fig. D, No. 81)

LOCATION: Lat. 55° 07' Long. 124° 03' (93N/1E)
OMINECA M.D. Four and one-half miles south of Mount Milligan, at approximately 4,000 feet elevation.

CLAIMS: MOSQUITO 1 to 10, ZAP 1 to 16.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization consists of minor chalcopyrite and abundant pyrite. The area lies within Takla Group volcanic flows and related sills near the Mount Milligan intrusive body.

WORK DONE: Ground magnetometer survey, 8.5 line-miles, 500-foot grid spacing and geochemical soil survey, 8.5 line-miles, 500-foot grid spacing, 590 samples covering all claims; surface diamond drilling, four holes totalling 1,806 feet on Mosquito 2, 4, and 9.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 363; Assessment Report 5175.

JW, JEAN **(93N-79, 83)** **(Fig. D, No. 83)**

By J. A. Garnett

LOCATION: Lat. 55° 06' Long. 124° 53' (93N/2W)
OMINECA M.D. Eight miles south of Tchentlo Lake, at the headwaters of Jean Marie Creek, at approximately 3,500 feet elevation.
CLAIMS: JEAN, JW, totalling 265.
OWNER: NBC Syndicate.
OPERATORS: COMINCO LTD., GRANBY MINING CORPORATION, DUVAL CORPORATION OF CANADA, STANDARD OIL COMPANY OF BRITISH COLUMBIA, c/o Cominco Ltd., 2200, 200 Granville Square, Vancouver.
METALS: Copper, molybdenum.
DESCRIPTION:

This large claim block is located within an intrusive outlier occurring south of Tchentlo Lake, about 6 kilometres due south of Mount Alexander (Garnett, 1974). The area was staked in 1969 by NBC Syndicate. Geochemical and IP surveys and diamond drilling were performed on a central anomalous zone during 1970 and 1971. In 1973, Cominco Ltd., one of the original partners in the syndicate, returned to conduct geological and IP surveys on an anomalous area west of the initial drilling. During the 1974 field season, a 32-kilometre road was built from Chuchi Lake to this location, and 11,000 feet (3,350 metres) of percussion drilling was completed.

Reconnaissance traversing within the fresh intrusive rocks in the vicinity of the anomalous zones indicates that the rock type is mainly a grey, medium-grained granodiorite containing roughly 60 per cent plagioclase, 15 per cent orthoclase, 15 per cent quartz, and 10 per cent biotite and hornblende. Textures are mainly granitic with local porphyritic varieties exhibiting euhedral plagioclase. A sample of fresh granodiorite taken from outcrops northeast of the mineralized zone yielded K-Ar dates of 136±4 m.y. (biotite) and 131±4 m.y. (hornblende). Dating from the Hogem and Germansen batholiths had previously defined three separate intrusive events in this region, falling roughly within the following age brackets: 180 to 200 m.y., 170 to 180 m.y., and 105 to 125 m.y. The dates obtained from the Jean stock suggest either a new intrusive period or an extension of the previously recognized Cretaceous event. In any case, the new dates indicate intrusive activity in this area similar in age to the Francois Lake intrusions of the Endako area.

The anomalous zones being investigated occur along the contact of this stock with dark grey aphanitic andesites and pyroxene porphyries of the Takla Group. This contact is pyritized and there is local garnet-epidote skarn development.

The main intrusive rocks within these zones are bleached granodiorites and quartz diorites cut by numerous dykes ranging in composition from plagioclase syenite porphyry through aplitic syenite to red granite.

Chalcopyrite, molybdenite, and hematite occur on orange-bleached (potash feldspathized) fractures in otherwise fresh granodiorites and quartz diorites. Chalcopyrite occurs as hornblende replacements in syenite dykes, and also occurs along with pyrite in quartz veins and fractures cutting both granodiorites and syenites. Malachite is common within fault zones along which granite and syenite dykes have cut the main intrusive and the adjacent volcanic rocks. The volcanic rocks exhibit blocky fracturing generally more pervasive than the fracture density of the crosscutting intrusive rocks, and chalcopyrite is locally significant along hairline fractures and smeared along small faults in the andesites within the altered contact zone.

Results of the 1974 percussion drilling programme were encouraging, and further development is planned for the 1975 season.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet and 1 inch equals 400 feet covering 20 claims; percussion drilling, 40 holes totalling 10,495 feet on JW claims; road construction, 20 miles on JW claims; trenching and stripping.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 365; Garnett, J. A. (1974), Geology and Copper-Molybdenum Mineralization in the Southern Hogem Batholith, North-central British Columbia, *C.I.M.*, Bull., Vol. 67, No. 749, pp. 101-106; Assessment Report 5343.

PU (93N-84) (Fig. D, No. 82)

LOCATION: Lat. 55° 08′ Long. 124° 31′ (93N/2E)
OMINECA M.D. On the north shore of Witch Lake, 2 miles from the east end, at approximately 3,000 feet elevation.

CLAIMS: PU 9 to 20.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Takla volcanic flows and related sills contain minor copper mineralization.

WORK DONE: Ground magnetometer survey, 7.6 line-miles, 500-foot grid spacing covering PU 9-11 and 250-foot grid spacing covering PU 13-15; IP survey, 2 line-miles and geochemical soil survey, 7.6 line-miles, 500-foot and 250-foot grid spacing, 422 samples covering same claims; surface diamond drilling, three holes totalling 1,132 feet on PU 9, 13, and 14.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 363; Assessment Report 5145.

KWANIKA CREEK (BOOM, FRANKIE) (93N-73) (Fig. D, No. 84)

By J. A. Garnett

LOCATION: Lat. 55° 30′ Long. 125° 20′ (93N/6W, 11W)
OMINECA M.D. Four to 8 miles north of Tsayta Lake, on Kwanika Creek, at approximately 3,000 feet elevation.

CLAIMS: BOOM, FRANKIE, OVP, MAYA, TGEE, JAM, CHO, AZTEC, TX, etc., totalling approximately 126.

OWNER: Bow River Resources Ltd.

OPERATOR: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

(93N/7W)

DESCRIPTION:

This property is owned by Bow River Resources Ltd., and, since 1964, has had more or less continuous investigation by various major exploration companies. Pechiney Development Limited optioned the ground in 1973, and as a result of detailed geological and IP surveys conducted that year, initiated a follow-up percussion-drilling programme in July 1974.

A detailed geological investigation of this property has previously been completed by this department (Garnett, GEM, 1972, pp. 440-447). Briefly, granitic rocks of Lower Cretaceous age intrude Lower Jurassic basic units of the Hogem batholith along the border of the Pinchi fault zone. Within the silicified and potash feldspathized hybrid zone created by this intrusion, pyrite with minor chalcopyrite and molybdenite occur within local highly fractured zones. The best mineralized sections occur along the banks of Kwanika Creek, which has cut through the extensive overburden covering most of the surrounding area. A north and south mineralized hybrid zone is separated by a wedge of Triassic Takla Group banded argillites. Previous detailed diamond and percussion drilling had concentrated on the north mineralized zone, but no drilling had been conducted on the less well-exposed south zone.

Thirty percussion holes were attempted during the 1974 season. Six failed to reach bedrock after encountering overburden cover in excess of 100 feet (30 metres). Seventeen holes were drilled in the south anomaly while 13 were drilled in the north zone, for a total of 9,820 feet (2,993 metres). Assaying of drill core from the south zone produced discouraging results.

WORK DONE: Percussion drilling, 30 holes totalling 9,820 feet; road construction, 3 miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 365, 366; Assessment Report 5266.

IAN (Fig. D, No. 85)

LOCATION: Lat. 55° 21' Long. 124° 54' (93N/7W)
OMINECA M.D. Eight miles north of Tchentlo Lake, 2 miles east of Ahdatay Lake.

CLAIMS: IAN 1 to 33.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

DESCRIPTION: The area is underlain by Takla Group volcanic flows near their contact with the Hogem batholith.

WORK DONE: Ground magnetometer survey, 50 line-miles, 250-foot grid spacing covering all claims; surface diamond drilling, four holes totalling 757 feet on Ian 4 and 9.

REFERENCES: Assessment Reports 5148, 5212.

VIRGIL (93N-174) (Fig. D, No. 96)

By J. W. McCammon

LOCATION: Lat. 55° 42.7' Long. 124° 24.6' (93N/9W)
OMINECA M.D. On the west flank of the Wolverine Range. The main showing is on the Virgil 3 and 4 claims at 1,625 metres elevation, 7 kilometres northeast of Manson Creek settlement.

CLAIMS: VIRGIL 1 to 6.

OWNER: PANTHER MINES LTD., c/o 436 Pacific Plaza, Calgary, Alta. T2P 0T8.

METAL: Niobium.

DESCRIPTION:

This property is on a syenite-carbonate complex which has yielded samples giving interesting niobium assays. The original discovery was made in July 1971 by Ernie Floyd who located and recorded the Virgil claims in September of that year. In October 1973 the ownership passed to Panther Mines Ltd. by bill of sale.

The showing is on the top of a small hump at the west end of a ridge. Trees are abundant but underbrush is thin. The only bedrock seen was in cuts opened up by bulldozer and in one small bluff 45 metres southeast of the heliport.

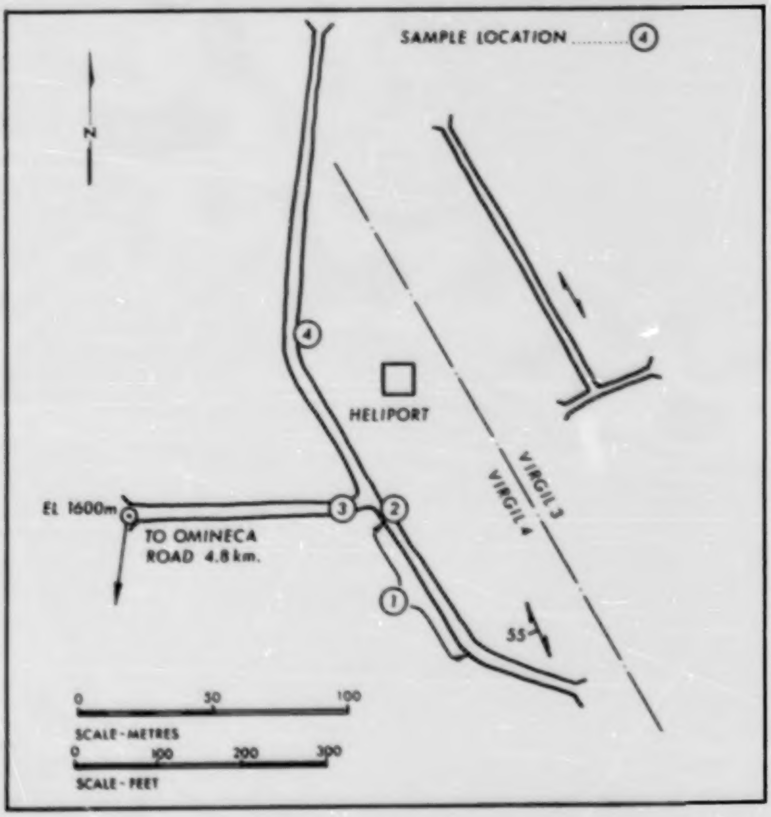

SAMPLE LOCATION .... ④
N
④
HELIPORT
VIRGIL 3
VIRGIL 4
EL 1600m
③
②
TO OMINECA ROAD 4.8 km.
①
55
0
50
100
SCALE - METRES
0
100
200
300
SCALE - FEET

Figure 30. Pace-compass sketch, Virgil showings, Panther Mines Ltd.

Because of poor exposures, no good contact relationships were seen. However, indications are that this showing consists of a syenite-carbonate complex enclosed in schists and gneisses of the Precambrian-Lower Cambrian Wolverine Complex. The general geological setting appears to be similar to that at the Lonnie property, 4 kilometres to the southeast on Granite Creek. Schist and quartz feldspar crush-breccia of uncertain origin are exposed in the east cut (Fig. 30). Schist occurs in the bluff southeast of the heliport, at the southeast end of the west cut, and in the western part of the west limb of the west cut. Intermixed fine-grained gneissic carbonate rock, coarse-grained carbonate rock, and fine and coarse-grained syenite are revealed in the west cut. The carbonate rock consists essentially of calcite and biotite with minor feldspar, apatite, zircon, and unidentified dark opaque grains. Foliation present in the schists and gneissic carbonate rock strikes north 20 to 45 degrees west and dips 48 to 55 degrees southwest. The syenite-carbonate band in the west cut is as much as 50 metres wide and has been exposed for 250 metres along strike.

A scintillometer was used to check all rock exposures. Except for an area indicated as sample 2 on Figure 30, the scintillometer readings averaged two to three times background. At sample 2 location the reading was 10 times background.

Four samples were collected at the locations shown on Figure 30. Sample 1 consisted of random chips of carbonate rock gathered along 56 metres on the floor of the cut; sample 2 consisted of random chips from a mound of syenite that showed the highest scintillometer count of the showing; sample 3 was composed of random chips of syenite exposed in the floor of the cut; sample 4 contained chips taken from across 6 metres of syenite in the floor of the cut. Chemical analyses of the samples, expressed in percentage, follow:

	Nb_2O_5	Ta_2O_5	U_3O_8	TiO_2	La	Nd	Y	Yb	Ga
Sample 1	0.01	0.001	0.001	0.15	0.05	0.03	Trace	Trace	Trace
Sample 2	0.03	0.001	0.008	0.20	---	---	---	---	Trace
Sample 3	0.022	0.001	0.003	0.20	0.03	0.03	Trace	Trace	Trace
Sample 4	0.012	0.001	0.001	0.15	Trace	Trace	---	---	Trace

Samples taken by others are reported to show higher contents of niobium.

WORK DONE: In the fall of 1973 a rough tractor road was pushed through from the Omineca Road to the showing and cuts as shown on Figure 30 were stripped.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1954, p. 96 (LONNIE); 1955, p. 30; *Geol. Surv., Canada,* Ec. Geol. Series No. 18, p. 29; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 368 (incorrectly VERGIL).

BALDY (Fig. D, No. 86)

LOCATION: Lat. 55° 37′ Long. 124° 40′ (93N/10E)
OMINECA M.D. Six miles south-southeast of the east end of Germansen Lake, at approximately 3,500 feet elevation.

CLAIMS: BALDY 1 to 10.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver V7X 1M4.

DESCRIPTION: A low drift-covered area is presumed to be underlain by granitic rocks of the Germansen batholith.

WORK DONE: Geochemical soil survey, 6 line-miles, 400-foot grid spacing, 334 samples covering Baldy 1-4 and 10.

GERM (Fig. D, No. 88)

LOCATION: Lat. 55° 39′ Long. 124° 51′ (93N/10W)
OMINECA M.D. Two and one-half miles south of Germansen Lake, on the north slope of Mount Germansen, at approximately 5,000 feet elevation.

CLAIMS: GERM 1 to 17.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver V7X 1M4.

DESCRIPTION: The area is underlain by granitic rocks of the Germansen batholith.

WORK DONE: Geochemical rock chip survey, one-half line-mile, 13 samples covering Germ 5 and 7.

SMOKE (93N-175) (Fig. D, No. 87)

LOCATION: Lat. 55° 35′ Long. 125° 19′ (93N/11W)
OMINECA M.D. Four miles north of the junction of Kwanika and West Kwanika Creeks, at approximately 4,000 feet elevation.

CLAIMS: SMOKE 1, 3, 5, 10 to 16, 25 to 49.

OWNER: ANGLO-BOMARC MINES LTD., 301, 540 Burrard Street, Vancouver.

METALS: Uranium, copper, molybdenum.

DESCRIPTION: Uraninite in quartz stringers and minor chalcopyrite and molybdenite on fractures.

WORK DONE: Magnetometer survey, 6.2 line-miles, 800 by 100-foot grid spacing covering Smoke 1, 3, 5, and 33-46; geochemical soil survey, 11.5 line-miles, 200 by 800-foot grid spacing, 351 samples covering Smoke 1, 3, 5 and 25-31, 33-46.

NC (Fig. D, No. 89)

LOCATION: Lat. 55° 59′ Long. 125° 35′ (93N/13E)
OMINECA M.D. Sixteen miles north-northwest of Old Hogem, in Haha Creek valley, at approximately 3,500 feet elevation.

CLAIMS: NC 1 to 8.

(93N/13E, 14W)

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

WORK DONE: Geochemical soil survey, 5 line-miles, 700 by 200-foot grid spacing, 125 samples covering NC 1-8.

TAM (93N-93) (Fig. D, No. 91)

By J. A. Garnett

LOCATION: Lat. 56° 00′ Long. 125° 30′

(93N/13E, 14W; 94C/3W, 4E)

OMINECA M.D. Thirty-five miles northwest of Germansen Landing, 14 miles north-northwest of Old Hogem, at approximately 5,000 feet elevation.

CLAIMS: TAM 1 to 20, HAM 1 to 52, AMP 1 to 13, SUZANNE 1 to 4, END 1 to 20, NA 1 to 12, 18 to 23, 25, REM 4 to 58, 63 to 66, 68, 70, 72, 74, 76, 78 to 82.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

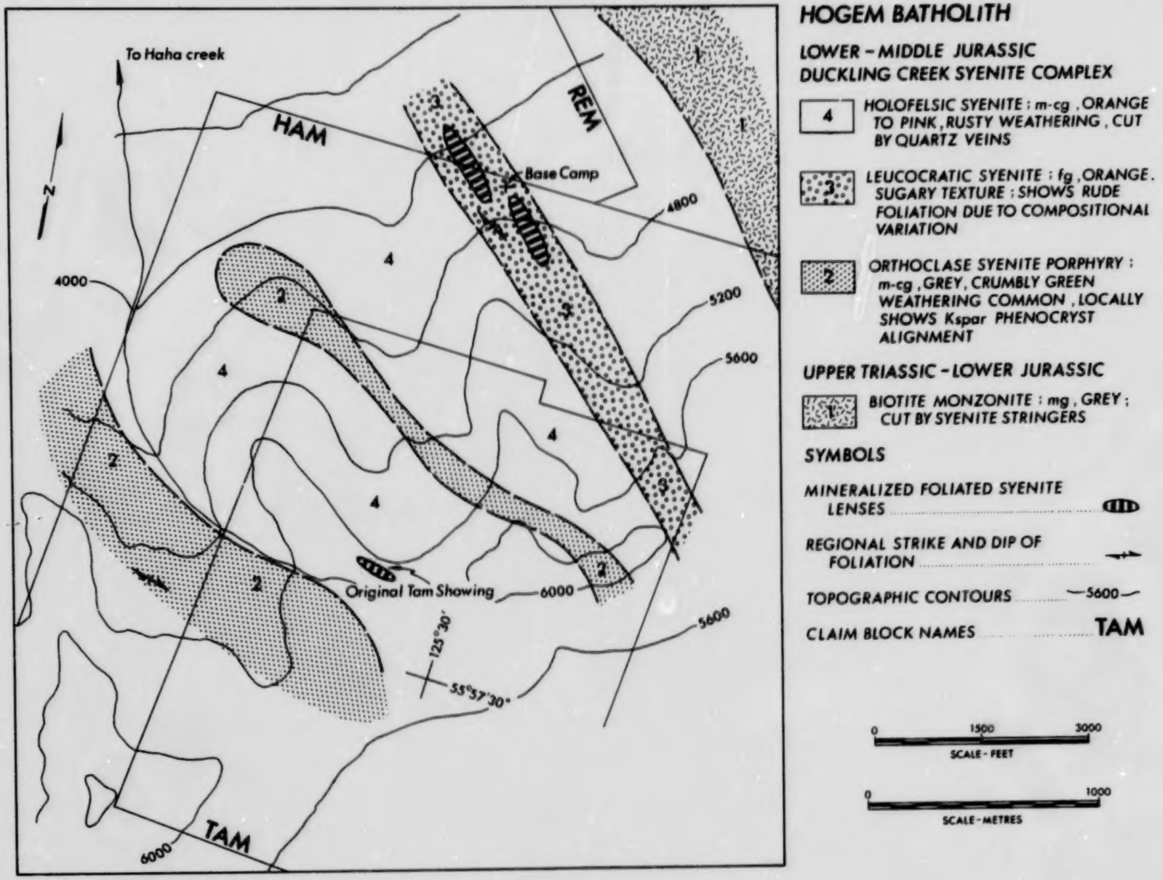
METAL: Copper.

DESCRIPTION:

The claims straddle Haha Creek, a northeast-flowing tributary of the Osilinka River. During the late 1940's, reconnaissance exploration of the Duckling Creek area by Kennco Explorations, (Western) Limited uncovered mineralization along a north-facing cirque wall overlooking the Haha Valley. The original showing was staked in 1968 by Omineca Explorations Ltd., and again by Union Miniere Explorations and Mining Company Limited in 1969. Intermittent work continued around this showing until late 1973, when geological mapping discovered new showings in the forested area below an adjacent cirque valley (Fig. 31). After completing detailed geochemical and IP surveys, a diamond-drilling project was initiated at the beginning of the 1974 field season. Over 7,000 feet (2,100 metres) of drilling was completed. This new showing represents the most significant new discovery in the Duckling Creek area in over 30 years of intermittent exploration.

The property lies entirely within the Duckling Creek Syenite Complex, near its northeastern boundary with biotite monzonites of the older basic sequence of the Hogem batholith (Fig. 31). The new mineral occurrences are within lenticular lenses of foliated fine-grained leucocratic syenite. The foliation trends northwesterly with steep to vertical dips, paralleling the long axis of the foliated syenite bodies. The mineralized lenses occur within a belt of fine-grained, orange, sugary textured syenite (unit 3). Foliation within this unit is defined by sericite and chlorite alignment and streaky colour banding of K-feldspar. Both the mineralized lenses and the surrounding unit 3 rocks are predominantly K-feldspar with minor sericite, chlorite, and calcite and locally accessory biotite. Magnetite is an erratically distributed accessory, and some specimens show orange-rusted hematite peppered throughout. These rocks are surrounded and cut by coarser grained, non-foliated syenites (unit 4).

Copper occurs mainly as chalcopyrite disseminations erratically distributed throughout the fine-grained syenites. Examination of drill core clearly illustrates the control of disseminations and veinlets of chalcopyrite (and rare bornite) along the foliation planes. However, chalcopyrite also occurs along fractures in both the fine-grained and coarse-grained syenites.


To Haha creek
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HAM
REM
Base Camp
4800
4000
5200
5600
6000
5600
6000
1
2
3
4
Original Tam Showing
125°30'
55°57'30"
TAM
HOGEM BATHOLITH
LOWER - MIDDLE JURASSIC
DUCKLING CREEK SYENITE COMPLEX
4 HOLOFELSIC SYENITE ; m-cg, ORANGE TO PINK, RUSTY WEATHERING, CUT BY QUARTZ VEINS
3 LEUCOCRATIC SYENITE ; fg, ORANGE. SUGARY TEXTURE ; SHOWS RUDE FOLIATION DUE TO COMPOSITIONAL VARIATION
2 ORTHOCLASE SYENITE PORPHYRY ; m-cg, GREY, CRUMBLY GREEN WEATHERING COMMON, LOCALLY SHOWS Kspar PHENOCRYST ALIGNMENT
UPPER TRIASSIC - LOWER JURASSIC
1 BIOTITE MONZONITE ; mg, GREY ; CUT BY SYENITE STRINGERS
SYMBOLS
MINERALIZED FOLIATED SYENITE LENSES
REGIONAL STRIKE AND DIP OF FOLIATION
TOPOGRAPHIC CONTOURS 5600
CLAIM BLOCK NAMES TAM
0 1500 3000
SCALE - FEET
0 1000
SCALE - METRES

Figure 31. Geology of the Tam, Ham, and Rem claims, Haha Creek area, Union Miniere Explorations and Mining Corporation Limited.

Quartz veins cut all units, and chalcopyrite was noted with quartz veining as well as with calcite-filled fractures in brecciated sections of core. This indicates two stages of mineralization, with the earlier foliated, disseminated type being the more predominant.

The mineralization here is identical to that on the original Tam showing, another smaller lens of the same foliated material. Also, these mineralized lenses are along the same general strike as those of the Lorraine deposit to the southeast, and the potential for further occurrences of this type within the Duckling Creek Syenite Complex is high.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Amp 12 and 13; IP survey, 9 line-miles, 400 and 800-foot grid spacing covering Rem 19-24, 27-30, Amp 6, 7, and Ham 45, 47-50; geochemical soil survey, 4 line-miles, 400 by 200-foot grid spacing, 98 samples covering Amp 8-13 and 7 line-miles, 189 samples on IP grid; surface diamond drilling, 13 holes totalling 7,170 feet on Rem 21, 22, 24, 33, 35, 36, Ham 47, 49, and Tam 5; trenching, 100 feet on Suzanne 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 379; Assessment Reports 4737, 5130, 5309.

FLAME (93N-176) (Fig. D, No. 90)

LOCATION: Lat. 56° 00′ Long. 125° 36′ (93N/13E; 94C/4E)
OMINECA M.D. Seventeen miles north-northwest of Old Hogem, at approximately 4,500 feet elevation.

CLAIMS: FLAME 1 to 64.

OWNER: L. M. Hart.

OPERATOR: THOR EXPLORATIONS LTD., 301, 540 Burrard Street, Vancouver.

METALS: Copper, minor molybdenum.

DESCRIPTION: Chalcopyrite occurs in fractures. Syenite intrudes quartz monzonites of the Hogem batholith.

WORK DONE: Magnetometer survey, 51.3 line-miles, 400 by 200-foot grid spacing and geochemical soil survey, 49.2 line-miles, 400 by 200-foot grid spacing, 1,310 samples covering all claims.

REFERENCES: Assessment Reports 5251, 5252.

JO ANN (93N-177) (Fig. D, No. 92)

LOCATION: Lat. 55° 57′ Long. 125° 29′ (93N/14W)
OMINECA M.D. Twelve miles north of Old Hogem, at approximately 5,000 feet elevation.

CLAIMS: JO ANN 1 to 10, 18, 20 to 48 and 1 and 2 Fractions.

OWNER: DOUGLAS STELLING, Germansen Landing.

METAL: Copper.

DESCRIPTION: Chalcopyrite and bornite mineralization occurs in monzodiorite and syenite and is accompanied by pink K-feldspar alteration. The property covers the contact between the Duckling Creek syenites and K-feldspar hybrid monzonites with some small irregular-shaped pods of feldspathic pyroxenite present.

WORK DONE: Geochemical soil survey, 6.5 line-miles, 200 by 400-foot grid spacing, 180 samples covering Jo Ann 27-30, 33-38.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 378, 379.

ST, DC (93N-178) (Fig. D, No. 93)

LOCATION: Lat. 55° 50' Long. 125° 15' (93N/14)
OMINECA M.D. Nine miles northeast of Old Hogem, 3 miles east of Duckling Creek, at approximately 3,500 feet elevation.

CLAIMS: ST 11 to 16, DC 1 to 44, ME 7 to 10.

OPERATOR: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Minor chalcopyrite and pyrite occur in association with abundant epidote stringers and to a lesser extent as disseminations. Geochemical and geophysical anomalies are present along the north contact of a syenite plug intruding Takla volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, approximately 35 line-miles, 400 by 200-foot grid spacing; IP survey, 9 line-miles, 800-foot grid spacing; geochemical soil and silt survey, approximately 35 line-miles, 400 by 200-foot grid spacing covering all claims.

REFERENCE: Assessment Report 5186.

OSI (93N-170) (Fig. D, No. 95)

LOCATION: Lat. 56° 00' Long. 124° 46' (93N/15W; 94C/2W)
OMINECA M.D. Seven miles north-northeast of Nina Lake, between 4,500 and 5,600 feet elevation.

CLAIMS: OSI 1 to 32.

OWNER: S.E.R.E.M. Ltd. in trust with Bergminex Associates.

OPERATOR: S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.

METALS: Lead, zinc, (silver).

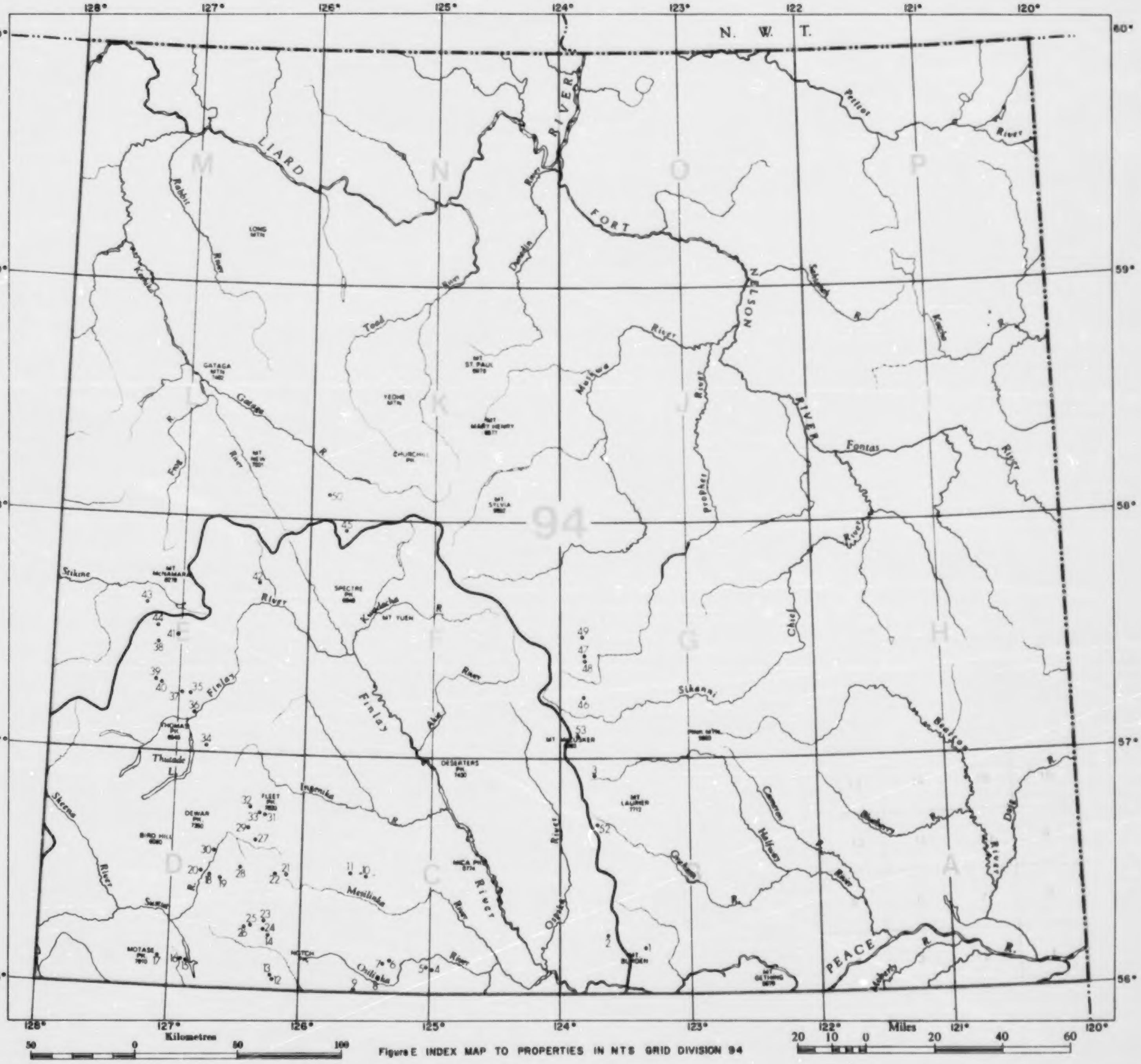
DESCRIPTION: Disseminated galena and light sphalerite occur in stockwork crosscutting a carbonate unit. Short veins of massive galena are present. Massive, thick-bedded grey to black limestone with fine grey, sometimes brecciated, coarse white-cream dolomitic zones, is overlain by grey slates (Middle Devonian ?) and in turn overlie remnants of older limestones and argillites (Ingenika Group, Upper Proterozoic ?).

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Osi 9-24; geochemical soil survey, 272 samples, 200 by 50-foot grid spacing, 2.5 line-miles covering Osi 2; 375 samples, 400 by 100-foot grid spacing, 7.1 line-miles covering Osi 1, 3, 4, 12, 17-22; and 220 samples, 400 by 200-foot grid spacing, 8.3 line-miles covering Osi 5, 7, 25-29, 31; trenching, 30 feet on Osi 17.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 380; Assessment Report 4955.

SHEILA (93N-172) (Fig. D, No. 94)

LOCATION:	Lat. 55° 54′ Long. 124° 42′ (93N/15E) OMINECA M.D. Nine miles north of Germansen Landing, 4 miles northeast of Nina Lake, between 3,400 and 4,000 feet elevation.
CLAIMS:	SHEILA 27 to 48.
OWNER:	S.E.R.E.M. Ltd. in trust with Bergminex Associates.
OPERATOR:	S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.
METALS:	Zinc, lead, (silver).
DESCRIPTION:	Disseminated light sphalerite with minor galena and pyrite occurs in dolomitic areas within a carbonate unit overlain by slates. Bedded to massive, grey to black limestones with grey, finely grained dolomitic lenses and white-cream coarsely grained dolomitic breccias are overlain by grey slates.
WORK DONE:	Surface geological mapping, 1 inch equals 500 feet covering Sheila 27-33, 41-45; geochemical soil survey, 340 samples, 200 by 100-foot grid spacing, 6.4 line-miles covering Sheila 31-33, 41, 42 and 140 samples, 400 by 200-foot grid spacing, 5.3 line-miles covering Sheila 43-48.
REFERENCE:	*B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 380, 381.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Stikine
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Osilinka
Omineca
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Beatton
Cameron
Halfway
Graham
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Blueberry
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Moberly
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GATAGA MTN
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YEDHE MTN
MT MARY HENRY
CHURCHILL PK
MT SYLVIA
SPECTRE PK
MT YUEN
MT McNAMARA
THOMAS PK
DEWAR PK 7350
BIRD HILL
FLEET PK
DESERTERS PK 7430
MICA PK
NOTCH PK
MOTASE PK
MT LAURIER 7712
MT BURDEN
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Figure E INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 94

KEY TO PROPERTIES ON INDEX MAP, FIGURE E.

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NORTHEAST BRITISH COLUMBIA
(NTS Division 94 Figure E)

HALFWAY RIVER 94B

POCO (94B-7, 8) (Fig. E, No. 1)

LOCATION: Lat. 56° 12' Long. 123° 22' (94B/3W)
LIARD M.D. Twelve miles north of the Peace River, 2 miles northeast of Mount Burden, at approximately 6,000 feet elevation.

CLAIMS: POCO 27 to 36.

OWNER: UNION OIL COMPANY OF CANADA LIMITED, Box 999, Calgary, Alta. T2P 2K6.

METALS: Lead, zinc.

DESCRIPTION: Lead and zinc showings occur in Middle Devonian carbonate rocks.

WORK DONE: Surface geological mapping covering Poco 27-36.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 460.

WL, ZRR (94B-6, 17) (Fig. E, No. 2)

LOCATION: Lat. 56° 15' Long. 123° 37' (94B/4E, 5E)
OMINECA M.D. Sixteen miles north of the Peace River, surrounding Wicked Lake.

CLAIMS: WL 1 to 32, ZRR 1 to 32.

OWNER: CORDILLERAN ENGINEERING LIMITED, 1418, 355 Burrard Street, Vancouver.

METAL: Zinc.

DESCRIPTION: Ordovician dolomite and shale are thrust eastward along the Mount Burden fault onto Devonian dolomite, limestone, and shale on the west limb of the Bernard anticline. Pyrite and/or marcasite occur as pods, veins, and disseminations in brecciated dolomite near the fault, yielding thick gossans. On WL 25 and 27 and ZRR 28 smithsonite or hemimorphite occurs along fractures and bedding surfaces and as breccia cement in the upper 400 feet of Dunedin limestone and dolomite.

WORK DONE: Trenching and sampling on WL 4-6 and 30-32; on WL 25-27 and ZRR 1, 4, 6, 9-16, and 28 prospecting, geological mapping at 1 inch equals 400 feet; 153 geochemical samples taken at 200 to 500-foot intervals along ridge crest and contour traverses.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 461; Assessment Reports 4141, 5246.

LINDA, ACE (94B-14) (Fig. E, No. 52)

LOCATION: LINDA 1 to 16, 26, 27, 31, 32 and ACE 61 to 70, 93 to 100 –
Lat. 56° 42' Long. 123° 44' (94B/12E)
LIARD M.D. One mile northeast of Lady Laurier Lake, at approximately 6,000 feet elevation.
ACE 31, 33, 35, 37, 39, 51 to 60, 85 to 90 –
Lat. 56° 41' Long. 123° 42' (94B/12E)
LIARD M.D. On Reef Mountain, 1 mile east of Lady Laurier Lake, at approximately 6,000 feet elevation.

CLAIMS: LINDA 1 to 16, 26, 27, 31, 32, ACE 31, 33, 35, 37, 39, 51 to 70, 85 to 90, 93 to 100.

OWNER: Bernard J. Marini.

OPERATOR: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver V6B 1P2.

METAL: Zinc.

DESCRIPTION: Minor sphalerite occurs in fractures in calcareous shales on the claims northeast of Lady Laurier Lake and minor limonitic gossan was found on the claim group on Reef Mountain.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; surface diamond drilling, one hole totalling 183 feet on Ace 62.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 385, 386; Assessment Report 5306.

ROBB LAKE (94B-5) (Fig. E, No. 3)

LOCATION: Lat. 56° 56' Long. 123° 45' (94B/13)
LIARD M.D. The property is centred 4 miles northeast of Robb Lake, between 4,500 and 7,000 feet elevation.

CLAIMS: ROB, MV, CLEO, BELL, BM, FBW, FG, JOSH, KIM, MART, NMW, NORM, REX, etc., totalling approximately 458.

OWNER: Robb Lake Joint Venture (Ecstall Mining Limited, Arrow Inter-America Corporation, Barrier Reef Resources Ltd.).

OPERATORS: ECSTALL MINING LIMITED and ARROW INTER-AMERICA CORPORATION, 701, 1281 West Georgia Street, Vancouver.

METALS: Zinc, lead.

DESCRIPTION: Sphalerite, galena, and some pyrite occur in brecciated dolomite mostly within the Stone Formation. The area is underlain by a thick sequence of Lower and Middle Paleozoic sedimentary rocks, the most important being dolomite of the Middle Devonian Stone Formation.

WORK DONE: Surface diamond drilling, 26 holes totalling 17,134 feet on Rob 3, 4, 14, 16, 17, 18, 19, 20, 32, 41, 43, MV 55, 60, and Cleo 129, 130.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 389; Assessment Report 5313.

FORT GRAHAME 94C

OSI (93N-170) (Fig. D, No. 95)

LOCATION: Lat. 56° 00′ Long. 124° 46′ (93N/15W; 94C/2W)
Report on this property in section 93N/15W.

GREG (94C-80) (Fig. E, No. 4)

LOCATION: Lat. 56° 06′ Long. 125° 00′ (94C/2W, 3E)
OMINECA M.D. Two miles northeast of the north end of Wasi Lake, at approximately 5,000 feet elevation.
CLAIMS: GREG 1 to 6, 11 to 14, OSS 1 to 11.
OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.
METALS: Zinc, lead.
DESCRIPTION: Mineralization consists of sphalerite and galena. Limestones and andesites are present.
WORK DONE: Trenching, 80 feet on Greg 5, 6, and 11.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 390.

WEBER (94C-24) (Fig. E, No. 5)

LOCATION: Lat. 56° 07′ Long. 125° 03′ (94C/3E)
OMINECA M.D. Approximately 1.5 miles northeast of Wasi Lake, on the southern slope of a hill between Wasi Creek and the Osilinka River, at about 3,500 feet elevation.
CLAIMS: CARIE 1 to 32.
OWNER: DOUGLAS STELLING, Germansen Landing.
METALS: Lead, zinc.
DESCRIPTION: Galena and lesser amounts of sphalerite and barite occur in dolomite breccia. The property covers the contact between a black, rusty slate and possible Lower or Middle Devonian dolomite.
WORK DONE: Geochemical survey, 5.3 line-miles, 320 soil samples at 50 by 200-foot grid spacing covering Carie 1-4 and 40 silt samples at 500 by 1,000-foot grid spacing covering Carie 5-18, 31, 32.
REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1930, p. 153; 1952, p. 105.

BETTY (94C-69) (Fig. E, No. 8)

LOCATION: Lat. 56° 04′ Long. 125° 22′ (94C/3W)
OMINECA M.D. Six miles west-southwest of Uslika Lake, 2 miles north of Osilinka River.
CLAIM: BET 1.
OWNER: Alvin Gerun.
OPERATOR: P. TEGART, 101, 1755 Vine Street, Vancouver.

(94C/3W)

METALS: Copper, gold.

DESCRIPTION: Takla Group andesite is altered and mineralized along eight fracture zones. Seven zones are parallel to the formational strike, whereas zone G is oblique. Zones A to F carry chalcopyrite and pyrite, zone A also carries chalcocite, and zones B and F also carry magnetite. Zone G is primarily a magnetite deposit, with subordinate chalcopyrite and good values in gold. Zone H carries chalcopyrite only. All have associated quartz. Widths are mostly 1 to 2 feet, but zone C attains 7 feet and zone A 15 feet. Lengths range from 80 feet to 230 feet.

WORK DONE: Linecutting, 1.9 miles of grid; magnetometer survey; surface geological mapping, 1 inch equals 100 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 219; Assessment Report 5290.

DAVE (94C-76) (Fig. D, No. 7)

LOCATION: Lat. 56° 07' Long. 125° 23' (94C/3W)
OMINECA M.D. Eight miles west-northwest of Uslika Lake, on the north side of Thane Creek, at approximately 6,000 feet elevation.

CLAIMS: DAVE 1 to 18.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite is associated with specularite as fracture fillings. Takla volcanic rocks are intruded by the Hogem batholith.

WORK DONE: Magnetometer survey, 7 line-miles, 500-foot grid spacing, covering Dave 12, 14, 16, and 18; geochemical soil survey, 175 samples, 7 line-miles, 500-foot grid spacing covering same claims; surface diamond drilling, three holes totalling 101 feet on Dave 18.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 396; Assessment Report 5248.

VEGA (94C-21, 43) (Fig. E, No. 6)

LOCATION: Lat. 56° 08' Long. 125° 20' (94C/3W)
OMINECA M.D. Six miles north-northwest of Uslika Lake on Vega Creek, at approximately 4,000 feet elevation.

CLAIMS: BEG 1 to 100, RON 1 and 2.

OWNER: BP MINERALS LIMITED, 405, 1199 West Pender Street, Vancouver.

METALS: Copper, gold, mercury.

DESCRIPTION: Mineralization consists of pyrite and chalcopyrite with traces of bornite, gold, magnetite, and cinnabar. Takla Group andesitic breccias are cut by syenitic dykes.

WORK DONE: Topography mapped; surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP and ground magnetometer survey, 27 line-miles, 400 and 800-foot grid spacing covering Beg 1, 3, 5, 7, 9, 21-30, 41-70, 73-78, 91, 99, 100 and Ron 1 and 2; airborne magnetometer survey, 104 line-miles, one-quarter and one-eighth-mile grid spacing covering all claims; geochemical silt, soil, bog, and talus survey, 35 line-miles, 400 and 800-foot grid spacing, 1,288 samples covering Beg 1, 3, 5, 7, 9, 21-30, 41-70, 73-80, 89-91, 99, 100 and Ron 1 and 2; linecutting, 42 miles of grid.

REFERENCES: *Geol. Surv., Canada,* Mem. 274, p. 225; Assessment Reports 5257, 5258, 5259.

TAM (93N-93) (Fig. D, No. 91)

LOCATION: Lat. 56° 00′ Long. 125° 30′ (93N/13E, 14W; 94C/3W, 4E)

Report on this property in section 93N/13E.

FLAME (93N-176) (Fig. D, No. 90)

LOCATION: Lat. 56° 00′ Long. 125° 36′ (92N/13E; 94C/4E)

Report on this property in section 93N/13E.

ND (94C-77) (Fig. E, No. 9)

LOCATION: Lat. 56° 01′ Long. 125° 34′ (94C/4E)
OMINECA M.D. Eighteen miles north-northwest of Old Hogem, at approximately 5,000 feet elevation.

CLAIMS: ND 1 to 8.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

METAL: Copper.

DESCRIPTION: Mineralization consists of disseminated chalcopyrite and occurs within foliated varieties of the Duckling Creek Syenite Complex.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering ND 1-6.

NEL (94C-79) (Fig. E, No. 10)

LOCATION: Lat. 56° 29′ Long. 125° 30′ (94C/5E, 6W)
OMINECA M.D. Ten miles northeast of Aiken Lake, on the south side of Swannell River.

CLAIMS: NEL 1 to 48.

OWNER: D. Reinke.

OPERATOR: INTERIOR SYNDICATE, c/o 107, 325 Howe Street, Vancouver V6C 1Z7.

METALS: Silver, lead, zinc, copper.

DESCRIPTION: Tenakihi Group quartz-muscovite schist is intruded by felsite.

(94C/12E)

WORK DONE: Geochemical soil survey, 38 samples taken on two reconnaissance lines at 400-foot intervals and 18 samples taken at 100-foot centres; reconnaissance surface geological mapping, 1 inch equals 1,000 feet covering parts of Nel 1-48 during 1973.

REFERENCE: Assessment Report 4880.

RAIN (94C-74) (Fig. E, No. 11)

LOCATION: Lat. 56° 30' Long. 125° 35' (94C/12E)
OMINECA M.D. Eight miles northeast of Aiken Lake and 2 miles south of the Swannell River, between 5,500 adn 6,500 feet elevation.

CLAIMS: RAIN 1 to 10.

OWNER: S.E.R.E.M. Ltd. in trust with Bergminex Associates.

OPERATOR: S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.

METALS: Lead, zinc, (silver, barite).

DESCRIPTION: Disseminated galena, honey sphalerite, and minor pyrite occur in a stockwork of ankerite, calcite, and barite within dolomitic zones crosscutting grey limestone. Lenses of dark grey dolomitized limestones are interbedded with brown argillites and green grits (Ingenika Group, Upper Proterozoic) overlain by grey slates and underlain by chloritic schists and impure quartzites.

WORK DONE: Surface diamond drilling, 13 holes totalling 2,155 feet on Rain 7, 8, and 9.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 399, 400.

McCONNELL CREEK 94D

FRED (94D-32) (Fig. E, No. 12)

LOCATION: Lat. 56° 03' Long. 126° 15' (94D/1)
OMINECA M.D. One mile northeast of Kaza Lake, at approximately 5,000 feet elevation.

CLAIMS: FRED 1 to 12, BOBO 1 to 16, MARG 1 to 7, GED 1 to 12, MONA 1 to 5, TRAIL 1 and 2, MAY 1 to 4, JOHN 1 to 8, HAR 1 to 14, SKI 5 to 7, TINA 9 to 14.

OWNER: Northstar Copper Mines Ltd.

OPERATOR: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: Chalcocite, bornite, and malachite are found in volcanic tuffs and sedimentary rocks.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and 1 inch equals 200 feet covering all claims; geochemical soil survey, 443 samples, 8 line-miles, 400 by 200-foot grid spacing covering Fred 1-4, Ski 5-7, and Tina 9-12; surface diamond drilling, eight holes totalling 398.5 feet on Fred 2 and 4; trenching, 130 feet on Fred 2 and 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 400; Assessment Report 5247.

DEF (Fig. E, No. 13)

LOCATION: Lat. 56° 05' Long. 126° 16' (94D/1W)
OMINECA M.D. Three miles north of Kaza Lake.
CLAIMS: DEF 1 to 42
OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.
DESCRIPTION: The claims are underlain by agglomerates, tuffs, and minor argillites of the Takla Group.
WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical soil survey, 568 samples, 10 line-miles, 500-foot grid spacing covering all claims.

ARP (94D-66) (Fig. E, No. 14)

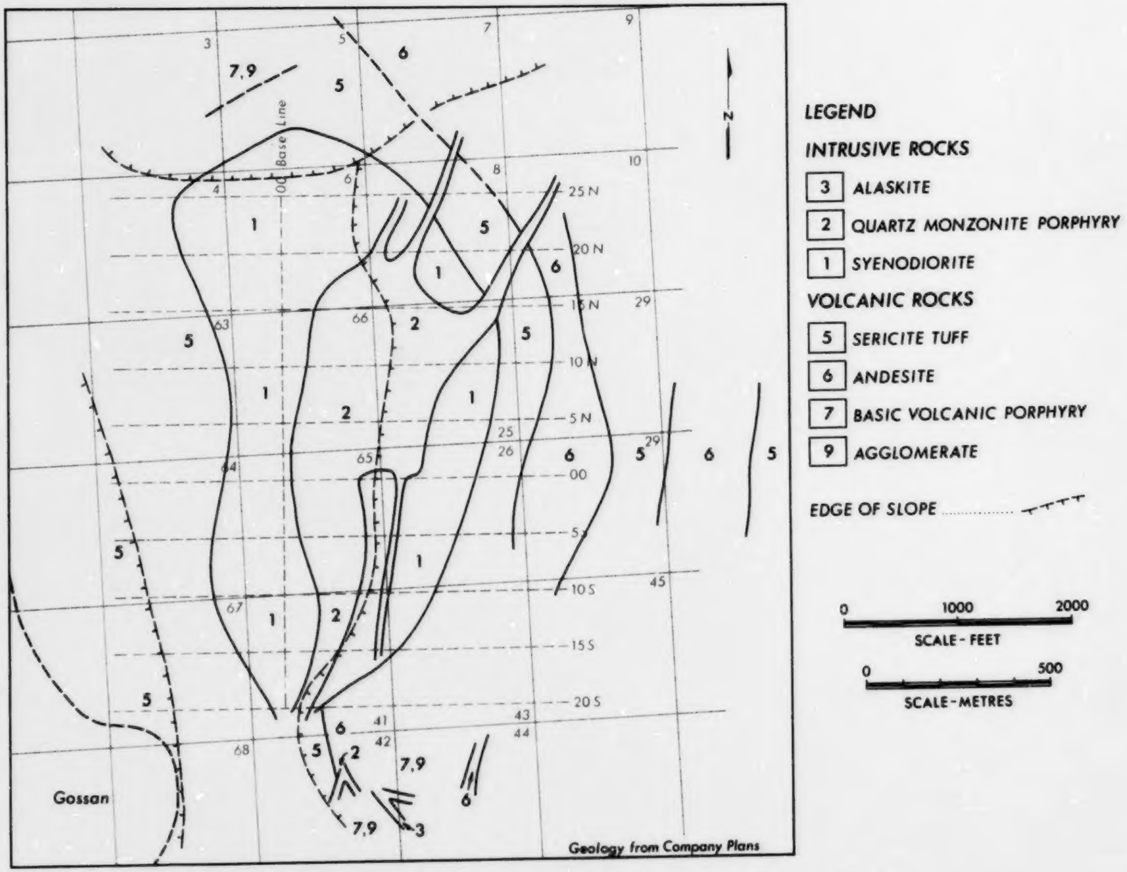
LOCATION: Lat. 56° 13' Long. 126° 16' (94D/1W)
OMINECA M.D. Four miles east-southeast of Mount Carruthers, Sikanni Range, between 5,500 and 5,700 feet elevation.
CLAIMS: ARP 1 to 10.
OWNER: S.E.R.E.M. Ltd. in trust with Bergminex Associates.
OPERATOR: S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.
METAL: Copper.
DESCRIPTION: A green volcanosedimentary sequence of the Takla Group is overlain by a reddish volcanosedimentary sequence of the Hazelton Group. Disseminated chalcocite occurs in thinly bedded andesitic tuffs and in fine-grained dacite.
WORK DONE: Surface diamond drilling, six holes totalling 1,130 feet on ARP 4 and 6.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 401; Assessment Report 5017.

BEAR (94D-68) (Fig. E, No. 15)

By T. G. Schroeter

LOCATION: Lat. 56° 07' Long. 126° 52' (94D/2W)
OMINECA M.D. On Tsaytut Spur, 2 miles west of Bear Lake and 3 miles northeast of Drift Lake, at approximately 5,500 feet elevation.
CLAIMS: BEAR 3 to 18, 25 to 36, 41 to 72, 77 to 108, 110 to 135.
OWNER: CANADIAN NICKEL COMPANY LIMITED, Copper Cliff, Ont.
METALS: Copper, molybdenum.
DESCRIPTION:

The Bear claims were staked in the fall of 1972 by Canadian Nickel Company Limited following the discovery of chalcopyrite and molybdenite in surface exposures. During the 1973 field season, rock sampling, geological mapping, and magnetic and induced polarization surveys were conducted. Diamond drilling of seven BQ holes plus three short X-ray drill holes was completed in 1974.


LEGEND
INTRUSIVE ROCKS
3 ALASKITE
2 QUARTZ MONZONITE PORPHYRY
1 SYENODIORITE
VOLCANIC ROCKS
5 SERICITE TUFF
6 ANDESITE
7 BASIC VOLCANIC PORPHYRY
9 AGGLOMERATE
EDGE OF SLOPE
0
1000
2000
SCALE - FEET
0
500
SCALE - METRES
N
00 Base Line
25 N
20 N
15 N
10 N
5 N
00
5 S
10 S
15 S
20 S
Gossan
7,9

Geology from Company Plans

Figure 32. Geology of the Bear property, Canadian Nickel Company Limited.

A northwesterly trending, steeply dipping volcanic sequence of the Takla Group including at least five distinct rock types constitute the oldest rocks on the property (Fig. 32). These include white, fine-grained rhyolites consisting of orthoclase, quartz, irregular patches of green biotite, and disseminated pyrite and magnetite. A prominent orange-brown gossan in highly fractured rhyolite is exposed near the south end of the claim group. Thinly laminated andesite tuffs occur east and west of the intrusive bodies, and up to 5 per cent pyrite is common in rocks on the western side. Associated with the tuffs are fine-grained, dark green andesites. Basic volcanic porphyries have a very fine-grained grey matrix containing plagioclase phenocrysts. Green to purple massive agglomerates with one-quarter inch to 6-inch fragments occur near the southeast edge of the intrusion.

A syenodiorite plug intrudes the volcanic sequence. The plug has been cut by a younger quartz monzonite porphyry body. The contact zone between the quartz monzonite porphyry and the syenodiorite is commonly occupied by a stockwork of fractures and quartz veinlets and randomly oriented alaskite dykes.

The syenodiorite is a medium-grained, grey, equigranular rock. Typical modal composition is: plagioclase, 55 per cent; orthoclase, 5 per cent; mafic minerals (amphibole and minor biotite), 30 per cent; quartz, 5 per cent; and accessory minerals including magnetite, 5 per cent. The syenodiorite is moderately to highly fractured throughout and contains a stockwork of quartz veinlets and aplite dykes. Pyrite, chalcopyrite, and molybdenite mineralization occurs in quartz veins, along fractures, and as disseminations. Mineralization is most widespread near the contact of the syenodiorite and the quartz monzonite porphyry.

The quartz monzonite porphyry forms the core of the intrusive body (Fig. 32). Medium-grained phenocrysts of quartz, plagioclase, and biotite occur in a very fine-grained matrix of quartz and feldspar. Large phenocrysts of orthoclase up to 1 inch long are common locally. In hand specimen the rock is generally grey to pale orange and the average composition is: orthoclase, 45 per cent; plagioclase, 35 per cent; quartz, 15 per cent; and biotite, 5 per cent. In general the rock is fresh and massive. Dykes of similar composition occur north and south of the main body. Along the eastern margin of the quartz monzonite porphyry there is a fairly intense stockwork of quartz veinlets carrying small amounts of pyrite and chalcopyrite. Alaskite is a fine to medium-grained quartz feldspar rock with no mafic minerals, found almost exclusively along the contact between syenodiorite and quartz monzonite porphyry where it occurs as a swarm of criss-crossing 6-inch to 1-foot dykes. Massive bodies up to 50 feet wide were noted locally. Molybdenite mineralization appears to be preferentially associated with the alaskite phase. Toward the northern end of the intrusion, a 15-foot-wide quartz feldspar porphyry dyke cuts across the syenodiorite. The rock has a brownish colour due to strong weathering of the feldspar.

Chalcopyrite and molybdenite mineralization appears to be uniform with depth. Some drill holes exhibited weathering to a depth of 250 feet. Malachite staining is significant and pyrite is ubiquitous. Better grades of mineralization are associated with a saussurite plus sericite alteration rendering the rocks an apple green colour.

(94D/2W)

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical rock chip survey, 191 samples covering Bear 55, 57, 77-80, 84, 94, 102-108; surface diamond drilling, 10 holes totalling 4,149 feet on Bear 6, 8, 25, 26, 27, 65, and 66.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 401; Assessment Reports 5236, 5269.

DAVE (94D-33) (Fig. E, No. 16)

LOCATION: Lat. 56° 07' Long. 126° 55' (94D/2W)
OMINECA M.D. Four miles north-northeast of Drift Lake, at the headwaters of Driftwood River, at approximately 4,500 feet elevation.

CLAIMS: DRIFT 1 to 22.

OWNER: CANADIAN NICKEL COMPANY LIMITED, Copper Cliff, Ont.

METAL: Copper.

DESCRIPTION: Quartz veins containing chalcopyrite and hematite occur in a sequence of basic volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 119; Assessment Reports 1614, 1616.

HORN (94D-69) (Fig. E, NO. 17)

LOCATION: Lat. 56° 07' Long. 127° 05' (94D/3E)
OMINECA M.D. Four miles north of Motase Lake, west side of Squingula River, at approximately 4,000 feet elevation.

CLAIMS: HORN 2, 4, 6, 8, 10, 15 to 48.

OWNER: Canadian Superior Exploration Limited.

OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: Molybdenite mineralization occurs in a stockwork of quartz veinlets in hornfelsed shales along the northern contact of a porphyritic granodiorite stock. The stock is elongate in an east-west direction and measures 7,000 by 1,000 feet.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 20 line-miles, 400 by 100-foot grid spacing; and geochemical soil survey, 700 samples, 20 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 402, 403; Assessment Reports 4731, 5323.

DAY (94D-65) (Fig. E, No. 20)

LOCATION: Lat. 56° 30' Long. 126° 47' (94D/7W, 10W)
OMINECA M.D. Three and one-half miles north of the Red Creek-Sustut River junction, at the headwaters of a west tributary of the Sustut River, at approximately 4,500 feet elevation.

(94D/7E, 10E)

CLAIMS: DAY 1 to 22, 40 42, 44, 46, 48, 50, FIR 1 to 12, BIRD 2, 4, 6, 35 to 48, 62, 64, 66 to 76, 89, 91, 93 to 107, 125, 126.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METALS: Copper, gold.

DESCRIPTION:

Mineralization consists of chalcopyrite and bornite, mostly in quartz stringers, accompanied by minor pyrite, hematite, and molybdenite. The host rock is an altered dioritic body which intrudes a Hazelton ? acid volcanic assemblage.

A hornblende concentrate obtained from samples of the diorite, analysed by J. Harakal at the University of British Columbia, yielded an apparent K-Ar age of 184±11 m.y.

WORK DONE: Surface diamond drilling, eight holes totalling 4,533 feet on Day 3, 4 and Bird 95.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 408 (*see* Fig. 34); *B.C. Dept. of Mines & Pet. Res.*, Geol. Fieldwork, 1974, pp. 53, 54; Assessment Report 5107.

A (94D-16, 38) (Fig. E, No. 19)

By B. N. Church

LOCATION: Lat. 56° 27′ Long. 126° 35′ (94D/7E, 10E)
OMINECA M.D. The property, at approximately 5,000 feet elevation, is bound on the west by Sustut River, on the north by Willow Creek, and on the south by the Asitka River.

CLAIMS: A 1 to 322, 325 to 700, and A 798 to 800 Fractions.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver V7X 1M8.

METALS: Copper, silver.

DESCRIPTION:

The main prospect on this large group of claims is one-half mile west of an extension of the Two Lake Creek lineament, 6.5 miles southeast of the Sustut River (latitude 56° 28′; longitude 126° 33′).

The principal showing consists of mineralized Hazelton ? volcanic rocks. These are reddish dacitic tuffs and tuff breccias which are locally impregnated with copper sulphides.

The largest mineralized bed is a dark maroon, brittle, partly welded ash flow deposit striking 130 degrees and dipping 80 degrees southwest. The bed attains a maximum thickness of about 20 feet and apparently can be traced for several hundred feet with a few offsets more or less along strike following the crest of a ridge. The offsets are due to small faults intercepting the beds almost at right angles.

A polished section of a well-mineralized sample shows an abundance of chalcocite occurring as tiny disseminated grains and as fillings in hairline cracks in the rock (Plate III). An assay of this sample ran 5.6 per cent copper.

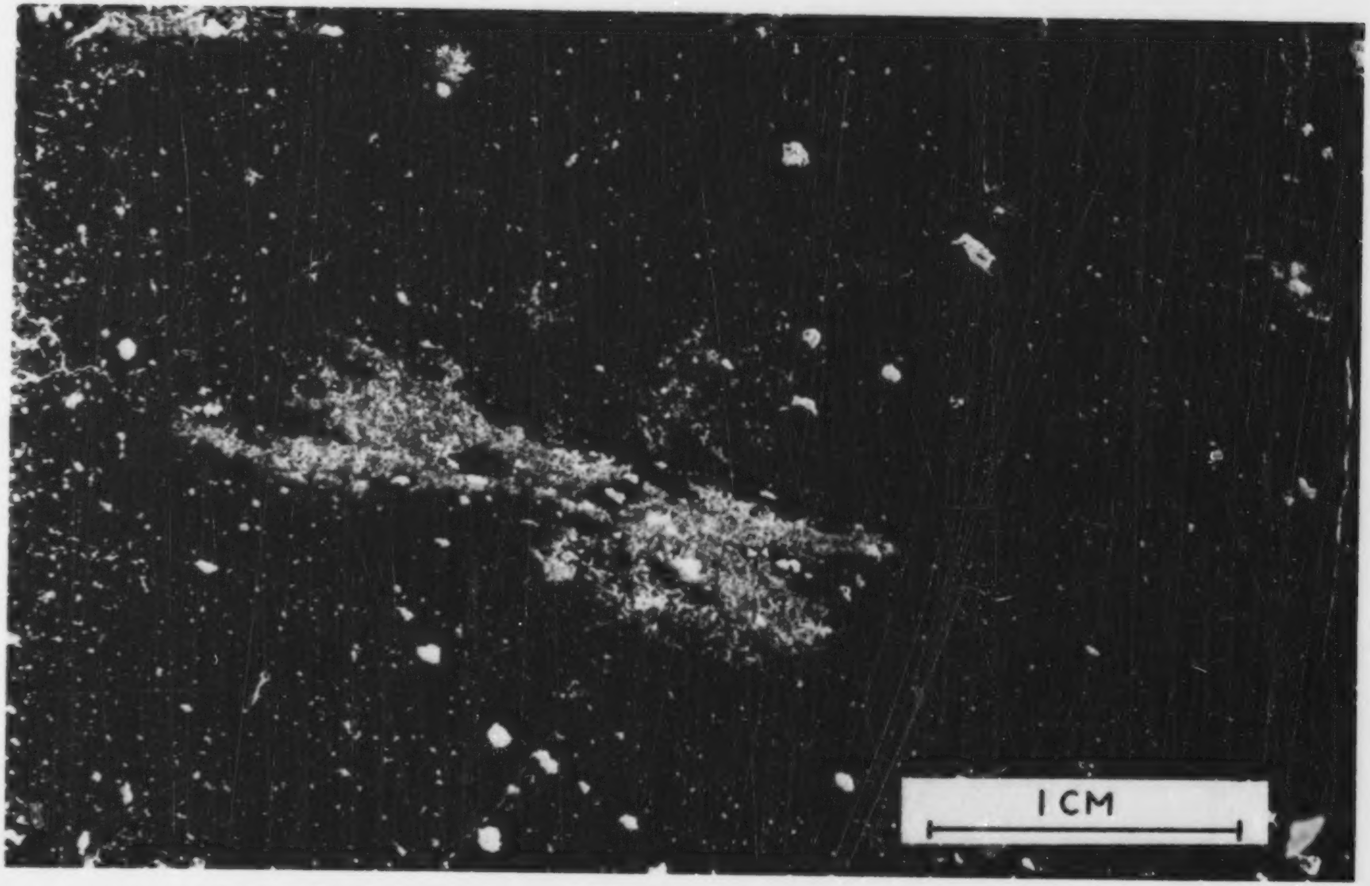


Plate III. Disseminated grains and veinlets of chalcocite and bornite (bright in reflected light) in welded dacitic tuff, A claims, Rio Tinto Canadian Exploration Limited.

(94D/7E)

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering A 462, 464; airborne magnetometer and electromagnetic survey, 398.3 line-miles, 600-foot grid spacing covering all claims; geochemical rock chip survey, 1,077 samples, 2 line-miles, 150-foot grid spacing covering A 462, 464; surface diamond drilling, two holes totalling 1,350 feet on A 462.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 407; Assessment Report 4921.

JET (Fig. E, No. 18)

LOCATION: Lat. 56° 28′ Long. 126° 43′ (94D/7E)
OMINECA M.D. Four miles northeast of the junction of Red Creek and Sustut River.

CLAIMS: JET 1 to 48.

OWNER: L. M. Hart.

OPERATOR: THOR EXPLORATIONS LTD., 301, 540 Burrard Street, Vancouver.

DESCRIPTION: The property is in an area of poor exposure extending southeast from the Sustut River between Vestor Explorations Ltd.'s Tie and Jan claims and Rio Tinto Canadian Exploration Limited's A claim group. The only rocks reported are unmineralized dark green volcanic breccias, possibly Takla Group basalt or an older Paleozoic unit. A sequence of younger Hazelton ? volcanic rocks, mainly ash flow beds and breccias of intermediate to acid composition, is exposed on the walls of a canyon on the Sustut River immediately northeast of a strong southeasterly trending fault. This fault more or less marks the northeast boundary of the claims.

WORK DONE: Geochemical soil survey, 212 samples, 6 line-miles, 800 by 200-foot grid spacing covering Jet 1-10, 25, 27, 29, 31, and 33.

REFERENCE: Assessment Report 5338.

PAD (94D-86) (Fig. E, No. 24)

LOCATION: Lat. 56° 16′ Long. 126° 18′ (94D/8W)
OMINECA M.D. One and one-half miles east of Mount Carruthers, Sikanni Range, between 5,600 and 6,000 feet elevation.

CLAIMS: PAD 1 to 12.

OWNER: S.E.R.E.M. Ltd. in trust with Bergminex Associates.

OPERATOR: S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.

METAL: Copper.

DESCRIPTION: Disseminated chalcocite is found in andesitic tuffs and dacite of the Takla Group.

WORK DONE: Surface diamond drilling, five holes totalling 1,052 feet on Pad 11 and 12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 408; Assessment Report 5047.

MAR (94D-93) (Fig. E, No. 26)

LOCATION: Lat. 56° 17′ Long. 126° 24′ (94D/8W)
OMINECA M.D. Three miles northwest of Mount Carruthers, at approximately 6,000 feet elevation.

CLAIMS: MAR 1 to 18, 21 to 30, 50 to 60, LEN 1 and 2, 8 to 13.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite, chalcocite, bornite, and pyrite occur as disseminations and in fractures in Takla Group in tuffaceous argillites and pyroclastic rocks overlain by augite porphyry flows.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; geochemical soil survey, 565 samples, 12 line-miles, 500-foot grid spacing covering Mar 7-10, 17, 27-30, and 50-60; trenching, 60 feet on Len 2.

REFERENCE: Assessment Report 5229.

GILL (Fig. E, No. 25)

LOCATION: Lat. 56° 17′ Long. 126° 27′ (94D/8W)
OMINECA M.D. Four miles northwest of Mount Carruthers and 6 miles southwest of Carruthers Pass, at approximately 6,000 feet elevation.

CLAIMS: GILL 1 to 20.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.

DESCRIPTION: Malachite and pyrite were observed in andesites, schists, and sedimentary rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 276 samples, 10 line-miles, 500-foot grid spacing covering all claims.

CAR (94D-18) (Fig. E, No. 23)

LOCATION: Lat. 56° 19′ Long. 126° 18′ (94D/8W)
OMINECA M.D. Sixteen miles south-southeast of Sustut Lake, on the south side of Quenada Creek.

CLAIMS: CAR 1 to 64, ANI 1 to 64.

OWNER: D. Reinke.

OPERATOR: INTERIOR SYNDICATE, c/o 107, 325 Howe Street, Vancouver V6C 1Z7.

METALS: Silver, lead.

DESCRIPTION: Takla Group argillite, siltstone, and shale are intruded by dykes and an irregular stock of diorite. On Car 12 and 14 narrow quartz veins in the sedimentary rocks contain galena and pyrite.

(94D/8E)

WORK DONE: 1973 – surface geological mapping, 1 inch equals 1,000 feet covering parts of Car 12-57 and parts of Ani 1-64; geochemical soil and silt survey, 118 samples taken at 400-foot intervals on reconnaissance lines covering parts of Ani 1-64.

REFERENCES: *Geol. Surv., Canada*, Mem. 261, p. 63; Assessment Reports 4878, 4879.

BAP (94D-92) (Fig. E, No. 21)

LOCATION: Lat. 56° 29′ Long. 126° 05′ (94D/8E)
OMINECA M.D. Seven miles south-southeast of Johanson Lake, at approximately 6,000 feet elevation.

CLAIMS: BAP 5, 8 to 19, 21 to 23, 25, 26, 30, 34.

OWNER: BP MINERALS LIMITED, 405, 1199 West Pender Street, Vancouver.

METALS: Copper, lead, zinc.

DESCRIPTION: Takla Group tuffs and flows are intruded by Omineca ultrabasic and quartz monzonite intrusions. Gossan zones are developed in pyritized volcanic rocks, and chalcopyrite, pyrite, and minor galena and sphalerite occur in quartz veins in quartz monzonite and tuffaceous volcanic rocks.

WORK DONE: Topographic mapping, 1 inch equals 1,000 feet covering 15.5 square miles; linecutting, 3 miles of grid; surface geological mapping, 1 inch equals 500 feet covering all claims; ground magnetometer and electromagnetic survey, 2.2 line-miles, 400-foot grid spacing covering Bap 9-11, 12-15, and 18, 19; geochemical survey, 271 soil and talus fines samples taken at 200 by 400-foot grid spacing and 73 chip and channel samples taken at varying intervals along three cross-lines of the grid covering all claims.

REFERENCE: Assessment Report 5135.

KLI (KENNCO) (94D-23) (Fig. E, No. 22)

LOCATION: Lat. 56° 30′ Long. 126° 09′ (94D/9E, 8E)
OMINECA M.D. Six miles south-southeast of Johanson Lake, at the headwaters of Kliyul Creek, at approximately 5,700 feet elevation.

CLAIMS: KLI 1 to 21, 25 to 28, 39 to 50.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver V6B 1L8.

METALS: Copper, gold, iron.

DESCRIPTION: The property is underlain by andesitic lavas of the Takla Group. Mineralization, which consists of chalcopyrite and gold accompanying magnetite, epidote, and pyrite, is associated with large northwesterly trending gossan zones which mark areas of silicification and pyritization within the andesites.

(94D/9W)

WORK DONE: Surface diamond drilling, 11 holes totalling 3,239 feet on Kli 6, 11, 13, 17, and 19.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 409; Assessment Report 5211.

ASITKA (WESFROB) (94D-100) (Fig. E, No. 28)

LOCATION: Lat. 56° 32' Long. 126° 29' (94D/9W)
OMINECA M.D. Three miles southwest of Sustut Lake, at approximately 6,000 feet elevation.

CLAIMS: ASITKA 49, 50, 73, 75, 77, 79, 95 to 105, 107 to 130, 145 to 154, 156 to 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION: Copper sulphides and carbonates are present in cracks and cavities in the uppermost of a series of aphyric basalt lava flows and breccias occurring near the middle of the Takla Group section. The basalt is overlain by a thin zone of poorly exposed limestones and shales which are stratigraphically equivalent to the mineralized beds on Wesfrob's Willow property 5.5 miles to the northwest.

WORK DONE: Geochemical soil survey, 28 samples, 0.68 line-mile, 400-foot grid spacing covering Asitka 126; surface diamond drilling, three holes totalling 903 feet on Asitka 125 and 127.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp, 410, 411.

ASITKA, BOB (NOMAD) (94D-87, 94 to 99) (Fig. E, No. 27) By B. N. Church

LOCATION: Lat. 56° 37' Long. 126° 24' (94D/9W)
OMINECA M.D. Three miles northeast of Sustut Lake, on the north and east slopes of Asitka Peak, between 5,000 and 7,000 feet elevation.

CLAIMS: ASITKA 1 to 26, 28 to 70, ASITKA 1 to 20 Fractions, BOB 1 to 6.

OWNER: NOMAD MINES LTD., 503, 470 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION:

Mineralization is associated with an elongated northwesterly trending granitic intrusion exposed on the northeast flank of Asitka Peak. Chalcopyrite, bornite, chalcocite, and copper carbonates have been found at a number of widely scattered localities as fracture fillings in the intrusion, as lenses and veins in the metamorphosed Takla rocks near the intrusive contact, and in shear zones and quartz veins in more remote areas in the surrounding country rocks. There is also an abundance of disseminated pyrite within the intrusive body especially in peripheral areas and near pendants of country rock.

The intrusion is mostly a medium-grained biotite and hornblende-rich rock of typical granodiorite composition (*see* Table of Chemical Analysis). A sample of partly chloritized biotite obtained by the writer and analysed by J. Harakal at the University of British Columbia gave a K-Ar age of 178±7 m.y. It is noted that this is only slightly younger than the mineralized dioritic stock on Wesfrob Mines Limited's Day prospect 15 miles to the southwest.

TABLE OF CHEMICAL ANALYSES

Oxides Recalculated to 100:

SiO_2	65.71
TiO_2	0.55
Al_2O_3	16.48
Fe_2O_3	2.28
FeO	2.23
MnO	0.13
MgO	1.97
CaO	5.02
Na_2O	3.98
K_2O	1.65
	100.00

Oxides as Determined:

SrO	0.06
BaO	0.09
H_2O+	0.94
H_2O-	0.18
CO_2	0.07
P_2O_5	0.23
SO_3	0.03

A sample of biotite hornblende granodiorite from the central area of intrusion on Asitka Mountain. Analysis by P. Ralph, British Columbia Department of Mines and Petroleum Resources.

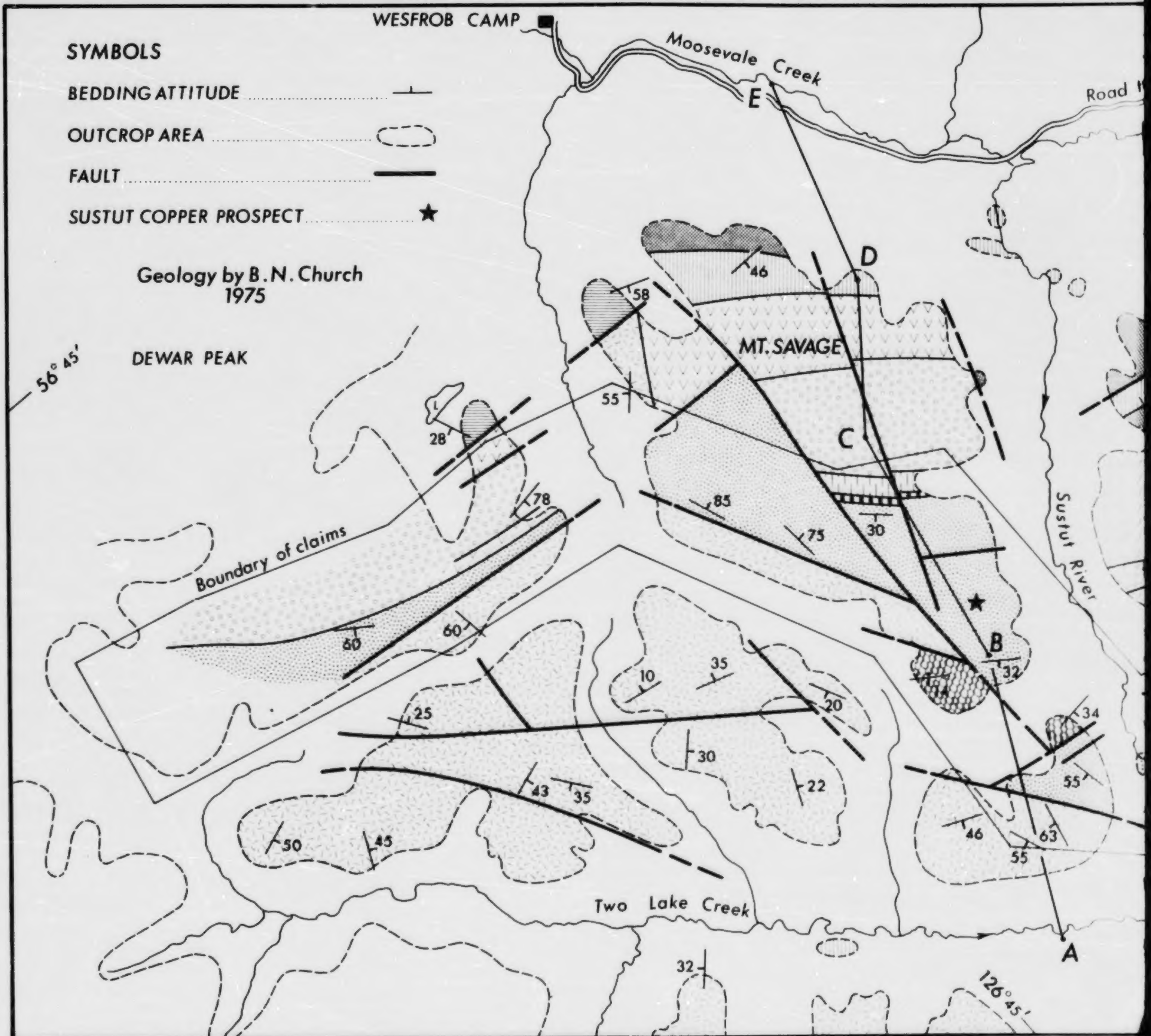
WORK DONE:

Work done on the property, mainly in the period June 1 to August 8, 1974, includes detailed geological mapping and delineation of outcrops on a topographic base with contours at 25-foot intervals. In addition about 20 miles of line were surveyed and marked for geochemical control and later 407 soil samples were collected and analysed for copper and molybdenum. To facilitate a diamond-drill programme a bridge was constructed crossing Johanson Creek and 3 miles of access road was completed joining the central part of the property to the Omineca Road. Four diamond-drill holes were completed by the end of the season with a total footage of 2,300 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 410; Assessment Reports 4603, 4753, 5202.

DS (94D-4) (Fig. E, No. 29)

LOCATION: Lat. 56° 41′ Long. 126° 26′ (94D/9W)
OMINECA M.D. Five miles north of Asitka Peak, at approximately 6,000 feet elevation.
CLAIMS: Z 1 to 60.
OWNER: Canadian Superior Exploration Limited.
OPERATOR: BP MINERALS LIMITED, 405, 1199 West Pender Street, Vancouver.
METAL: Copper.
DESCRIPTION: Mineralization resembles the Marmot prospect several miles to the northwest and the Fred prospect 45 miles to the southeast near Kaza


WESFROB CAMP
SYMBOLS
BEDDING ATTITUDE
OUTCROP AREA
FAULT
SUSTUT COPPER PROSPECT ★
Geology by B.N. Church
1975
DEWAR PEAK
56° 45'
Moosevale Creek
Road
E
D
C
B
A
MT. SAVAGE
Boundary of claims
Sustut River
Two Lake Creek
126° 45'
46
58
55
28
78
85
75
30
60
60
10
35
20
25
30
22
43
35
50
45
32
34
55
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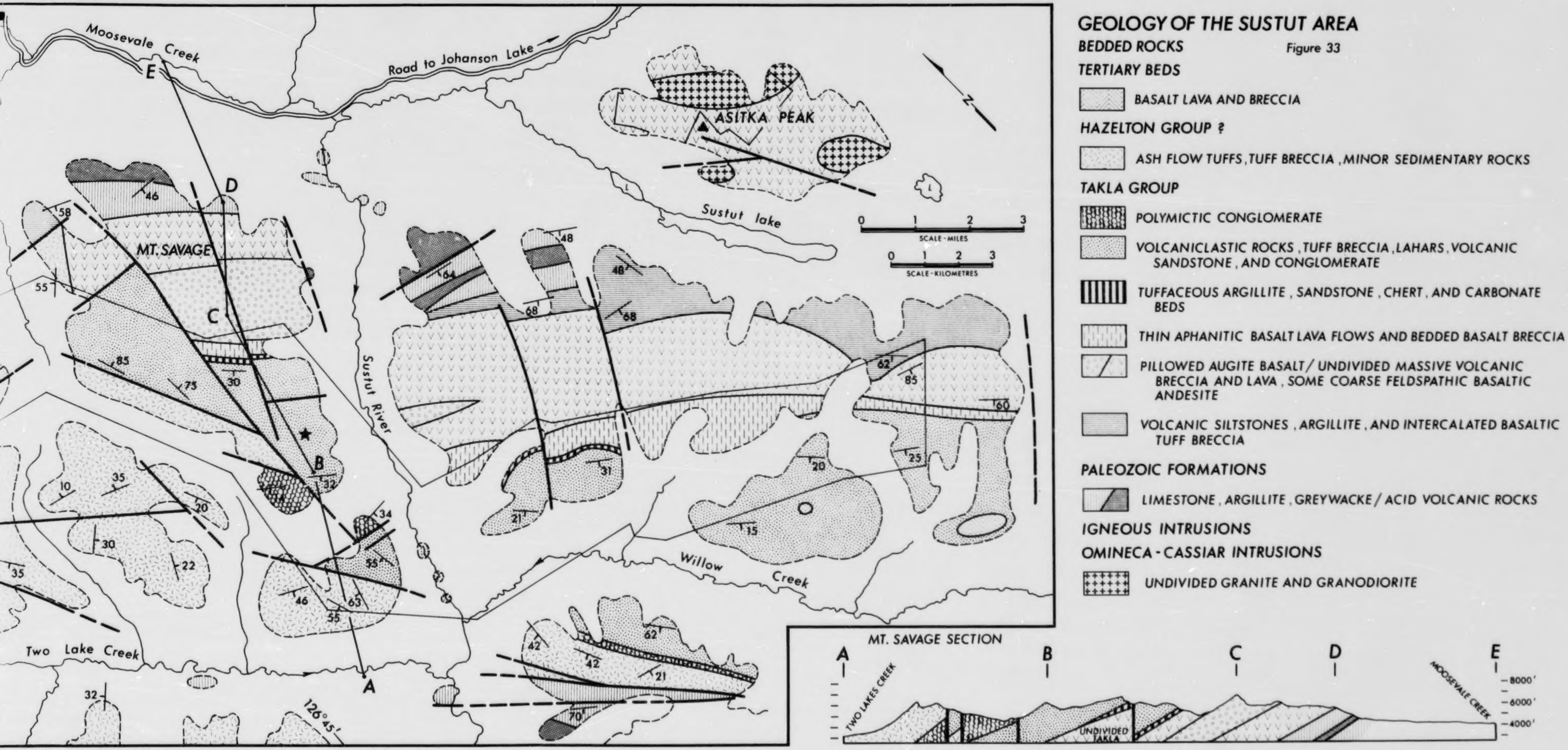
63
55
32



GEOLOGY OF THE SUSTUT AREA

Figure 33

BEDDED ROCKS
TERTIARY BEDS
BASALT LAVA AND BRECCIA
HAZELTON GROUP ?
ASH FLOW TUFFS, TUFF BRECCIA, MINOR SEDIMENTARY ROCKS
TAKLA GROUP
POLYMICTIC CONGLOMERATE
VOLCANICLASTIC ROCKS, TUFF BRECCIA, LAHARS, VOLCANIC SANDSTONE, AND CONGLOMERATE
TUFFACEOUS ARGILLITE, SANDSTONE, CHERT, AND CARBONATE BEDS
THIN APHANITIC BASALT LAVA FLOWS AND BEDDED BASALT BRECCIA
PILLOWED AUGITE BASALT / UNDIVIDED MASSIVE VOLCANIC BRECCIA AND LAVA, SOME COARSE FELDSPATHIC BASALTIC ANDESITE
VOLCANIC SILTSTONES, ARGILLITE, AND INTERCALATED BASALTIC TUFF BRECCIA
PALEOZOIC FORMATIONS
LIMESTONE, ARGILLITE, GREYWACKE / ACID VOLCANIC ROCKS
IGNEOUS INTRUSIONS
OMINECA - CASSIAR INTRUSIONS
UNDIVIDED GRANITE AND GRANODIORITE
N
0 1 2 3
SCALE - MILES
0 1 2 3
SCALE - KILOMETRES
Moosevale Creek
Road to Johanson Lake
ASITKA PEAK
Sustut lake
L
MT. SAVAGE
Sustut River
Willow Creek
Two Lake Creek
126°45'
A
B
C
D
E
58
46
55
85
75
30
10
35
20
30
22
35
32
34
55
46
63
55
64
48
48
68
68
62
85
60
25
20
31
21
15
42
42
62
21
70
32
MT. SAVAGE SECTION
A
B
C
D
E
TWO LAKES CREEK
MOOSEVALE CREEK
UNDIVIDED TAKLA
8000'
6000'
4000'

Lake. Chalcocite, bornite, and chalcopyrite are found in fractures, in veinlets and as disseminations often in close association with coarse feldspar porphyry, Takla Group basaltic andesite lavas and breccias.

WORK DONE: Topography mapped; linecutting, 8.7 miles of grid covering Z 3-13, 49-55, 57; surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP survey, 2.6 line-miles, 800-foot grid spacing covering Z 3-8, 10, 51-54; ground magnetometer survey, 8.7 line-miles, 800-foot grid spacing covering Z 3-13, 49-55, 57; geochemical silt, soil and talus fines survey, 1,848 samples, 8.7 line-miles, 800-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 410 (Z); *Geol. Surv., Canada,* Mem. 251, p. 61; Assessment Reports 474, 650, 4593.

BIRD (94D-101) (Fig. E, No. 31)

LOCATION: Lat. 56° 45′ Long. 126° 20′ (94D/9W, 16W)
OMINECA M.D. Twelve miles north-northeast of Sustut Lake, 3 miles southwest of Fleet Peak, at approximately 5,000 feet elevation.

CLAIMS: BIRD 1, 2, 4, 6, 8 to 33, 35 to 44.

OWNER: BP MINERALS LIMITED, 405, 1199 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Takla Group volcanic rocks are intruded by quartz feldspar diorite porphyry.

WORK DONE: Topography mapped; linecutting, 6.5 miles of grid covering Bird 6, 8, 10, 12, 14-26, 42-44; surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP and ground magnetometer survey, 6.14 line-miles, 800-foot grid spacing covering Bird 6, 8, 10, 12, 14-26, 42-44; geochemical soil, silt, and talus fines survey, 604 samples, 6.5 line-miles, 800-foot grid spacing covering Bird 6, 8, 10, 12, 14-32, 38-44.

REFERENCE: Assessment Report 5254.

GEOLOGY OF THE SUSTUT AREA

By B. N. Church

A programme of reconnaissance and detailed mapping has been completed in the Sustut area. The work in 1974 was directed toward expanding the area of geological control from a few cross-sections to a regional study. The total extent of geological mapping to date is shown on Figure 33. This area is centred on the Sustut copper prospect and covers the main block of Wesfrob Mines Limited's claims.

STRATIGRAPHY: With few exceptions the general stratigraphic interpretation resulting from the present study concurs with previous descriptions (GEM, 1973, pp. 411-416). The most important revision concerns the position of the polymictic conglomerate formation in the Mesozoic section. Additional work on the ridges southwest of Willow Creek indicates that the conglomerate is above the volcaniclastic beds at the boundary of the Takla and Hazelton Groups.

One of the primary objectives of the investigation was to trace the volcaniclastic unit which is host to the mineralization at the Sustut copper deposit. This was achieved although no new mineralization was discovered. The beds were followed a distance of about 10 miles striking north and northwest from the main showing and about 15 miles to the southeast.

Mapping in 1974 disclosed the presence of an inlier of Paleozoic rocks southeast of the Sustut River, on an extension of the Two Lake Creek lineament. This succession, approximately 3,500 feet thick, appears to be overturned but is otherwise similar to the Permian sequence on the north and northeast spurs of Sustut Peak and Mount Savage. The section consists of rhyolite and siliceous pyroclastic rocks overlain by an assemblage of interbedded shales, limestones, and chert together with bands of fragmental volcanic rocks and a thin zone of pillow basalt.

Much of the history of the Mesozoic pile is revealed in the sedimentary rocks. The most widely distributed sedimentary formation occurs at the base of the Takla Group and is best developed on the ridges southwest of Sustut Lake. Similar rocks have been reported from the Dewar Peak area (Monger, 1974) and have been discovered by the writer beyond the southwest boundary of the map-area. These are dark, laminated, greenish grey sandstones and siltstones which are frequently intercalated with basaltic tuffs and breccias. In thin section the sandstones are composed largely of volcanic clasts with admixtures of broken pyroxene and plagioclase, remnants of shells, and a few quartz grains. The volcanic fragments and crystals appear to be the product of submarine eruption; the quartz (generally less than 8 per cent) was evidently transported together with bits and pieces of shells from an adjacent older terrain.

The remaining lower section of the Takla Group consists of basaltic pillow lavas and breccias with only a few lenses of sandstone and minor limestone. Evidently volcanic activity was vigorous at this stage allowing little opportunity for accumulation of sedimentary material.

The volcaniclastic rocks overlying the Lower Takla succession have been described previously in some detail (GEM, 1973, p. 420). This is mainly a 'high energy' deposit consisting of a mixture of coarse clastics, mostly lahars, conglomerates, and primary volcanic breccias. In the Mount Savage section, the unit is rather massive with only occasional zones of fine-grained sedimentary rocks. Further south in the Willow Creek area the formation is more complex, being subdivided into a basal conglomeratic zone, a middle zone consisting primarily of volcanic breccia, and an upper zone comprising well-bedded shales, sandstones, and conglomerates with some intercalated tuff breccia. The formation is homogeneous in composition with only basalt and basaltic andesite fragments. The sandstones contain some quartz but the dominant mineral clasts are pyroxene and plagioclase.

The distinctive polymictic conglomerate formation passes transitionally into volcaniclastic rocks and appears to be part of the same 'high energy' deposit. The composition of the conglomerate reflects important changes in the source area including the unroofing of some granitic intrusions and a variety of Paleozoic rocks.

The upper part of the Mesozoic section, tentatively referred to here as the Hazelton Group, consists of locally well-layered, maroon and grey, welded and non-welded ash flow tuffs and volcanic breccias ranging in composition from basalt to rhyolite. Sedimentary rocks, mainly volcanic conglomerate and tuffaceous sandstones, occur throughout the pile. Thin-section studies indicate that the sandstones are composed mainly of feldspathic volcanic clasts, some quartz (about 15 per cent), and some pyroxene. The relative abundance of quartz in these sedimentary rocks compared to those in the underlying Takla Group is typical of the more salic character of the Hazelton volcanic rocks.

STRUCTURE: A varied development of folds and faults is evident in the map-area. The belt of Hazelton and Upper Takla rocks flanking the northeast side of Willow Creek, extending through to Two Lake Creek, is characterized by gently undulating beds cut by minor faults. In marked contrast, the Paleozoic and Lower Takla rocks on the spurs northwest of Sustut Lake and on the north part of Mount Savage display some spectacular folds, major dislocations, and a faulted repetition of the strata (Plate IVA).

The Two Lake Creek lineament is one of the most significant structural features in the area (Plate IVB). This was identified by Lord (1948) as part of the Omineca fault zone, a northern extension of the Pinchi fault system.

The Two Lake Creek section of the fault appears to have been active over a long period. Earliest movement probably predated eruption of Triassic pillow basalts and further activity has continued through to recent time. Emplacement of Takla polymictic conglomerate and volcaniclastic rocks appears to have been the culmination of development of a traphrobasin. This basin began with the deposition of a great volume of marine strata, followed by a wedge of coarse continental material east of the fault. Uplifting west of the fault unroofed Paleozoic rocks which provided the source for the polymictic conglomerate. Further movement is indicated by the present juxtaposition of Paleozoic and Hazelton ? sequences across the fault, visible in the area south of the Sustut River.

MINERALIZATION: Wesfrob's Sustut copper prospect is the main mineral occurrence in the region. This is an unusual stratiform chalcocite-rich deposit of a few tens of millions of tons grading slightly more than 1 per cent copper. The deposit occurs in a sandstone and conglomerate-rich layer in the volcaniclastic formation of the Takla Group.

Other small stratiform-type deposits have been discovered by Wesfrob on the Willow and Sit claims situated 2.5 and 6 miles respectively southeast of the Sustut copper prospect. Mineralization at the Willow group consists of thin, discontinuous chalcopyrite and chalcocite disseminations in shales at the base of the volcaniclastic formation. The Sit occurrence is a small deposit of chalcopyrite, bornite, and chalcocite in fractures and gas cavities in aphyric basalt near the top of the lower division of the Takla Group. A few stratiform copper deposits of apparent minor significance have been found in association with ash flow tuffs and breccias of the Hazelton Group. Typical of these is the occurrence on the A claims of Rio Tinto Canadian Exploration Limited (latitude 56° 28'; longitude 126° 33') and Wesfrob's Pluto prospect a few miles to the north. The 'Topper showings' optioned to Brascan Resources Limited (latitude 56° 38'; longitude 126° 45') may be a similar type occurrence.

Intense prospecting was also in progress in the diorite and granodiorite intrusions northeast and southwest of the main belt of Takla rocks. In August, Nomad Mines Ltd. moved drill equipment onto a gossan area developed in a biotite-hornblende-granodiorite stock on the northeast flank of Asitka Mountain (Fig. 33). Silt samples taken from this area returned some high copper values.

Further west, more drilling was completed on Wesfrob's Day prospect near the Sustut

Plate IVA. Folded Takla Group rocks on northern spur of Mount Savage, view looking west from the Sustut River.

TWO LAKE CREEK
SUSTUT RIVER

Plate IVB. The Two Lake Creek lineament, looking northwest from the Sustut River.

River (Fig. 33). The target was a small but locally well-mineralized dioritic stock. This appears to be among the oldest of a series of intrusions in the immediate area.

Radiometric (K-Ar) dating has been completed on three granitic stocks. Hornblende separates from the Day stock and a similar body to the southeast, referred to as the Pat intrusion, were analysed by J. Harakal at the University of British Columbia yielding K-Ar ages of 184±11 m.y. and 186±6 m.y. respectively. These are slightly older than a biotite separate from the granitic intrusion on the northeast flank of Asitka Mountain, which has a K-Ar age of 178±7 m.y.

REFERENCES:

Church, B. N. 1973, *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 411-443; ...., 1974, *B.C. Dept. of Mines & Pet. Res.*, Geol. Fieldwork, pp. 51-55; Lord, C. S., 1948, *Geol. Surv., Canada*, Mem. 251, 72 pp.; Monger, J.W.H., 1974, *Geol. Surv., Canada*, Paper 74-1, Pt. B, pp. 29-30; Monger, J.W.H. and Paterson, I. A., 1974, *Geol. Surv., Canada*, Paper 74-1, Pt. A, p. 20.

SUSTUT COPPER (94D-63) (Fig. E, No. 30)

By B. N. Church

LOCATION: Lat. 56° 36′ Long. 126° 40′ (94D/10E)
OMINECA M.D. Four miles west-northwest of Sustut Peak, on the west side of Sustut River, at approximately 6,000 feet elevation.

CLAIMS: SUSTUT 1 to 132.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION:

Mineralization consists of disseminations and veinlets of chalcocite, bornite, chalcopyrite, pyrite, and some native copper in gently dipping volcaniclastic beds of the Takla Group. This is an unusual stratiform deposit consisting of a few tens of millions of tons grading slightly more than 1 per cent copper.

The following are preliminary geochemical results on host rock samples (115 hand specimens) collected in vicinity of the deposit:

Total Extractable Metals from Volcaniclastic Rocks*
(using a strong acid leach)

	Ag	Cu	Pb	Zn	Ni	Mn	Sr
Threshold(s) ppm	2.1	125	40	100	41	1500	15
Background (mode) ppm	1.7	70	30	85	33	1150	8

*Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources.

WORK DONE: Continued property mapping in support of diamond drilling; surface diamond drilling, 52 holes totalling 24,970 feet on Sustut 2, 3, 4, 5, 6, 7, 8, 10, 24, and 107.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 417-432; Assessment Reports 5060 to 5064, 5108 to 5110.

BOW (Fig. E, No. 33)

LOCATION: Lat. 56° 46′ Long. 126° 22′ (94D/16W)
OMINECA M.D. Four miles west-southwest of Fleet Peak, at approximately 5,300 feet elevation.

CLAIMS: BOW 1 to 8.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.

DESCRIPTION: Takla Group andesites are intruded by a sill-like mass of highly pyritic, porphyritic diorite.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet covering all claims; surface diamond drilling, one hole totalling 202 feet on Bow 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 455; Assessment Report 5286.

NIKOS (94D-85) (Fig. E, No. 32)

LOCATION: Lat. 56° 48′ Long. 126° 25′ (94D/16W)
OMINECA M.D. Fifteen miles north of Sustut Lake and 6 miles west-northwest of Fleet Peak, in the Ingenika River valley, at approximately 4,000 feet elevation.

CLAIMS: NIKOS 1 to 36.

OWNER: UTAH MINES LTD., 160, 1050 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite and pyrite occur in sheared volcanic rocks of the Takla Group near a small granodiorite intrusion.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 360 samples, 17 line-miles, 200 by 400-foot grid spacing covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 455.

TOODOGGONE RIVER 94E

RAT (94E-25) (Fig. E, No. 34)

LOCATION: Lat. 57° 02′ Long. 126° 47′ (94E/2W)
OMINECA M.D. At the south end of Duncan Lake, which lies 3 miles east of the north end of Thutade Lake, at approximately 5,000 feet elevation.

CLAIMS: RAT 6 to 10, 15, 17, 19, DL 1 to 26, DL 15 Fraction.

OWNERS: Cominco Ltd. and Craigmont Mines Limited.

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METAL: Copper.

DESCRIPTION: Pyrite and chalcopyrite mineralization occurs in intrusive acid porphyries and in acid fragmental volcanic rocks.

WORK DONE: Linecutting and topographic mapping; IP survey, 10 line-miles, 800-foot grid spacing covering Rat 6-10, 15, 17, 19 and DL 1-15 and DL 15 Fraction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 187; Assessment Report 5324.

VIP (94E-47, 48, 49) (Fig. E, No. 36)

LOCATION: Lat. 57° 10' Long. 126° 52' (94E/2W)
OMINECA M.D. Six miles north of the north end of Thutade Lake, 1 mile northwest of Finlay River, at approximately 4,000 feet elevation.

CLAIMS: VIP 1 to 40.

OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METALS: Copper, molybdenum, zinc, silver.

DESCRIPTION: Chalcopyrite, molybdenite, sphalerite, and magnetite occur in several small skarn zones within coarsely recrystallized limestone re-entrants or roof pendants in a medium-grained granodiorite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and 1 inch equals 1,000 feet; magnetometer survey, 14 line-miles, readings every 100 feet on lines 400 feet apart; and geochemical soil survey, 364 samples taken every 200 feet on lines 400 feet apart covering VIP 1-16, 25-40.

REFERENCE: Assessment Report 5144.

XMAS (94E-39) (Fig. E, No. 35)

LOCATION: Lat. 57° 14' Long. 126° 56' (94E/2W)
OMINECA M.D. Twelve miles north-northwest of the north end of Thutade Lake, 3 miles north-northwest of Drybrough Peak.

CLAIMS: PILL 1 to 12.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: CONWEST EXPLORATION COMPANY LIMITED, 10th Floor, 85 Richmond Street West, Toronto, Ont.

METAL: Copper.

DESCRIPTION: The claims are underlain by Takla Group andesite and basalt and Toodoggone rhyolite and feldspar porphyry.

WORK DONE: 1973 – geochemical survey, 133 silt, soil, and talus fines samples taken at 200 by 400-foot grid spacing covering Pill 1-6, 8, 10.

REFERENCE: Assessment Report 4971.

SHAS (94E-50) (Fig. E, No. 37)

LOCATION: Lat. 57° 14' Long. 127° 00' (94E/2W, 3E)
OMINECA M.D. North and east of the Black Lake airstrip, at the north end of Black Lake.

CLAIMS: SHAS 27 to 38.

OWNER: SHASTA MINES & OIL LTD., 534, 789 West Pender Street, Vancouver.

METAL: Copper.

WORK DONE: Geochemical soil survey, 198 samples taken at 100 by 200-foot and 200 by 400-foot grid spacing covering Shas 31, 33, 35-38.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 457; Assessment Report 5187.

CHAPPELLE (94E-26) (Fig. E, No. 40)

LOCATION: Lat. 57° 17′ Long. 127° 06′ (94E/6E)
OMINECA M.D. Ten miles south-southwest of Toodoggone Lake, at approximately 5,600 feet elevation.

CLAIMS: CHAPPELLE, totalling approximately 170.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: DU PONT OF CANADA EXPLORATION LIMITED, 102, 1550 Alberni Street, Vancouver.

METALS: Gold, silver, copper.

DESCRIPTION: Gold and silver mineralization is found in northeast-trending quartz veins in Takla Group volcanic rocks. The vein ranges from 4 feet to 40 feet wide and dips steeply to the northwest.

WORK DONE: Magnetometer survey, 1.5 line-miles, 50-foot grid spacing covering Chappelle 6; surface diamond drilling, 20 holes totalling 7,476 feet on Chappelle 3, 4, and 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 459, 460; Assessment Report 5268.

LAWYERS (SAUNDERS) (94E-17) (Fig. E, No. 39)

LOCATION: Lat. 57° 18′ Long. 127° 12′ (94E/6E)
OMINECA M.D. Six miles southwest of Toodoggone Lake, at approximately 5,800 feet elevation.

CLAIMS: LAWYERS 10, 12, 35 to 57, 59 to 74, 79, 88, 90, 92, 94, 96, 105 to 116, 121, 122, 161, 163 to 172, 177, 180 to 209, LAWYERS 178 and 180 Fractions.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver V7X 1M4.

METALS: Gold, silver, lead.

DESCRIPTION: Very fine-grained native gold, silver, and electrum occur in a silicified breccia zone within trachyte porphyry flows of Toodoggone volcanic rocks.

WORK DONE: Geochemical survey, 220 samples taken at 200 by 100-foot intervals covering Lawyers 203-206 and 209; surface diamond drilling, four holes totalling 2,004 feet on Lawyers 181 and 183.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 460, 461; Assessment Reports 5106, 5167.

WAS, PIT (94E-31, 32 (Fig. E, No. 38)

LOCATION: Lat. 57° 27′ Long. 127° 11′ (94E/6E)
OMINECA M.D. Twelve miles south-southwest of Chukachida Lake, between McClair and Moosehorn Creek, from 4,400 to 5,900 feet elevation.

CLAIMS: WAS 1 to 32, PIT 41 to 47, 49, 51, 69 to 76, 159 to 168, 191, 193, 195, SUM 3 to 20, JUG 1 to 32, RIP 1 to 22, 24 to 29, 31 to 34, 36 to 38.

(94E/6E)

OWNER: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver V6B 1L8.

METALS: Lead, zinc, silver, copper.

DESCRIPTION: Pyrite, chalcopyrite, sphalerite, and galena occur in steeply dipping quartz-carbonate veins and in shear zones developed in Toodoggone volcanic rocks including silicified andesites, tuffs, and agglomerates.

WORK DONE: Surface diamond drilling, five holes totalling 2,019 feet on Pit 69, 73, 162, Rip 15, and Jug 7.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 461, 462; Assessment Report 5072.

GORD (94E-51, 52) (Fig. E, No. 41)

LOCATION: Lat. 57° 29' Long. 127° 02' (94E/6E)
OMINECA M.D. Five miles north-northeast of the west end of Toodoggone Lake, at approximately 6,500 feet elevation.

CLAIMS: GORD 1 to 46.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

METALS: Lead, zinc, copper.

DESCRIPTION: Lead, zinc, and copper mineralization is found in small, discontinuous quartz and/or quartz-carbonate veins and veinlets in fault zones or at geological contacts. The claims are underlain by a thick sequence of greenish and purplish andesitic flows, cherty andesites, and porphyritic andesitic pyroclastic rocks, possibly part of the upper division of the Takla Group.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet covering all claims; VLF EM survey, 6.92 line-miles covering Gord 1-20; geochemical soil survey, 293 samples, 800-foot grid spacing, 10.78 line-miles covering all claims.

REFERENCE: Assessment Report 5194.

ERN (Fig. E, No. 42)

LOCATION: Lat. 57° 42' Long. 126° 23' (94E/9W)
OMINECA M.D. Nine miles northwest of Mount Finlay, 1.5 miles east of Obo River.

CLAIMS: ERN 1 to 4.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

DESCRIPTION: The claims are underlain by dolomite, dolomitic shale, and sandy dolomite of the Ingenika Group.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; linecutting, 1.9 miles of grid; geochemical soil survey, 83 samples taken at 100 by 400-foot grid spacing covering all claims.

REFERENCE: Assessment Report 5285.

HAR (94E-53) (Fig. E, No. 44)

LOCATION: Lat. 57° 32′ Long. 127° 12′ (94E/11E)
OMINECA M.D. Two miles southeast of the junction of Hiamadam and Moosehorn Creeks.

CLAIMS: HAR 1 to 6.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: CONWEST EXPLORATION COMPANY LIMITED, 10th Floor, 85 Richmond Street West, Toronto, Ont.

METALS: Lead, zinc, copper.

DESCRIPTION: The claims are underlain by massive and porphyritic andesite and basalt flows of the Takla Group. A felsite sill intrudes the massive lava, and the porphyritic lava is cut by a quartz-carbonate vein carrying sporadic galena, sphalerite, pyrite, and chalcopyrite.

WORK DONE: 1973 – geochemical silt, soil, and talus fines survey, 122 samples taken at approximately 200-foot centres covering all claims.

REFERENCE: Assessment Report 4970.

CLAW (94E-46) (Fig. E, No. 43)

LOCATION: Lat. 57° 37′ Long. 127° 19′ (94E/11)
LIARD M.D. Ten miles west of Chukachida Lake and 3 miles northwest of Moosehorn Lake, at approximately 5,500 feet elevation.

CLAIMS: CLAW 1 to 20, 25 to 36, 43 to 52, 57, 59, 61, 63, 66, 68, 70, 72, 75 to 77.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

METAL: Copper.

DESCRIPTION: Chalcopyrite, pyrite, and bornite occur in a massive, conformable sequence of porphyritic andesitic flows and pyroclastic rocks of the Takla Group.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet covering all claims; ground magnetometer survey, 3.84 line-miles, 400 by 800-foot grid spacing and geochemical soil survey, 86 samples taken at 200-foot intervals, 3.84 line-miles covering Claw 25-31, 33, 51, 52, 75-77; surface diamond drilling, two holes totalling 587 feet on Claw 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 462; Assessment Reports 5230, 5242.

WARE 94F

RED (Fig. E, No. 45)

LOCATION: Lat. 57° 56′ Long. 125° 45′ (94F/13)
LIARD M.D. Thirty-five miles north of Ware, on the west side of the South Gataga River.

(94G/4W)

CLAIMS: RED 1 to 6.
OWNER: J. H. SCHUSSLER, 13135 – 20th Avenue, Surrey.
DESCRIPTION: Black graphitic schist contains quartz stringers with pyrite.
WORK DONE: Surface diamond drilling, two AQ holes totalling 197 feet on Red 1.
REFERENCE: Assessment Report 5232.

TRUTCH 94G

LAD, LASS (94G-14) (Fig. E, No. 53)

LOCATION: Lat. 57° 05' Long. 123° 53' (94G/4W)
LIARD and OMINECA M.D. On the eastern slope of Mount McCusker, at approximately 6,000 feet elevation.
CLAIMS: LAD 1 to 8, 10, 27 to 38, 53 to 62, 64, 80, 82 to 92, 103 to 118, 129 to 150, LASS 6 to 11, EL DORADO 1 to 52.
OWNER: Zenith Mining Corporation Ltd.
OPERATOR: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver V6B 1P2.
METALS: Zinc, lead.
DESCRIPTION: Sphalerite and galena occur in brecciated dolomite. The area is underlain by Silurian to Devonian dolomite, quartzite, and calcareous shales.
WORK DONE: Surface diamond drilling, 14 holes totalling 3,118 feet on Lass 7 and Lad 53, 55, 56.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 465.

EGG, FOO (94G-2) (Fig. E, No. 48)

LOCATION: Lat. 57° 22' Long. 123° 49' (94G/5W)
LIARD M.D. The claims are centred 2.5 miles northeast of the east end of Redfern Lake, at approximately 6,000 feet elevation.
CLAIMS: EGG 1 to 8, FOO 6, 10, 12, 14, 16 to 25, CHILLY 36, DAMN 1 to 10, TYR 1 to 43.
OWNER: Vestor Explorations Ltd.
OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, 615, 555 Burrard Street, Vancouver V7X 1M8.
METALS: Zinc, lead, fluorite, barite.
DESCRIPTION: Sphalerite, galena, fluorite, and barite are present in Lower Devonian reefal carbonates of the Dunedin Formation.
WORK DONE: Surface diamond drilling, nine holes totalling 1,997 feet on Foo 19, 22, 24, and Egg 3, 7.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 468, 469; Assessment Report 5179.

TRI (94G-7) (Fig. E, No. 46)

LOCATION: Lat. 57° 15′ Long. 123° 52′ (94G/5W, 4W)
LIARD M.D. The property is centred 6 miles south of Redfern Lake, at approximately 5,500 feet elevation.

CLAIMS: TRI 1 to 110.

OWNER: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta. T2P 0M4.

METALS: Lead, zinc, copper.

DESCRIPTION: Blebs of galena, sphalerite, and chalcopyrite occur in veins with barite and calcite in grey fossiliferous limestone of the Dunedin Formation of Devonian age.

WORK DONE: Surface geological mapping, 1:6,000; geochemical survey, 818 soil samples, 200 by 100-foot grid spacing, 15.5 line-miles covering Tri 21-28, 41-48 and 126 talus fines samples, 400-foot grid spacing, 5.8 line-miles covering all claims; trenching, 25 feet on Tri 46.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 467, 468.

KEI (94G-9) (Fig. E, No. 47)

LOCATION: Lat. 57° 25′ Long. 123° 50′ (94G/5W)
LIARD M.D. The property is centred approximately 5 miles north-northeast of Redfern Lake, at approximately 5,000 feet elevation.

CLAIMS: KEI 1 to 154.

OWNER: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta. T2P 0M4.

METALS: Lead, zinc.

DESCRIPTION: Lead-zinc mineralization occurs in stratiform masses in limy breccia as well as in undisturbed mineralized microcrystalline limestone of the Devonian Dunedin Formation.

WORK DONE: Geochemical survey, 405 soil samples, 200 by 100-foot grid spacing, 7 line-miles covering Kei 112-135 and 407 talus fines samples, 200-foot grid spacing, 15.4 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 469; Assessment Reports 5316, 5317.

RUST (94G-11) (Fig. E, No. 49)

LOCATION: Lat. 57° 31′ Long. 123° 53′ (94G/12W)
LIARD M.D. Eleven miles north of Redfern Lake, between Keily and Richards Creeks, from 6,000 to 7,000 feet elevation.

CLAIMS: RUST 1 to 15, 17, 49 to 52, 57 to 81, 83, 85 to 112.

OWNER: Tyee Lake Resources Ltd.

OPERATOR: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta. T2P 0M4.

METALS: Lead, zinc.

DESCRIPTION: Dispersed lead-zinc mineralization is found in cherty limestone of the Dunedin Formation.

WORK DONE: Geochemical survey, 774 soil samples, 200 by 400-foot grid spacing, 14.8 line-miles covering Rust 1-15, 49, 50, 61-72 and 84 talus fines samples, 400-foot grid spacing, 5.2 line-miles covering Rust 1-15, 49-52, 57-81.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 469.

TUCHODI LAKES 94K

D, P (94K-66) (Fig. E, No. 50)

LOCATION: Lat. 58° 04′ Long. 125° 55′ (94K/4W)
LIARD M.D. Twenty-nine miles southwest of Churchill Peak, straddling Driftpile Creek, at approximately 4,100 feet elevation.

CLAIMS: D 1 to 54, P 1 to 54, G 1 to 40, GOOF 1 to 5 Fractions.

OWNER: CANEX PLACER LIMITED, 800, 1030 West Georgia Street, Vancouver.

METALS: Zinc, lead.

DESCRIPTION: Minor sphalerite and galena occur in pyritic beds in a sequence of black shales of Ordovician age.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering D 2, 4, 6, 8, 10, 19-28, 37-46, P 1-12, 19-28, 37-39, 41, 43, 45, 47, and Goof 1-5 Fractions and 1 inch equals 1 mile covering the rest of the claims; geochemical soil survey, 1,200 samples taken every 100 feet on lines 400 feet apart, 23 line-miles; linecutting; trenching, 270 feet on P 19, 23 and D 20, 22, 37, 41.

REFERENCE: Assessment Report 5359.

MAGNUM MINE (94K-3) (Fig. E, No. 51)

By D.I.R. Henderson

LOCATION: Lat. 58° 31′ Long. 125° 24′ (94K/11W)
LIARD M.D. At the headwaters of Delano Creek.

CLAIMS: Fifty-eight, including ME, CAN, MAC, and HI.

OPERATOR: CONSOLIDATED CHURCHILL COPPER CORPORATION LTD., Operating Division, 702, 900 West Hastings Street, Vancouver.

METAL: Copper (production shown on Table 6).

DESCRIPTION: Quartz-ankerite veins containing chalcopyrite strike northeasterly and dip steeply in Precambrian sedimentary rocks.

WORK DONE: Mining, mainly by shrinkage stope methods, continued throughout 1974 at approximately 15,000 tons per month. Recovery of pillars was achieved by a longhole drilling method. The exploration programme consisted of 171.5 feet of crosscutting, 8,070 feet of diamond drilling, 2,026 feet of drifting, 981 feet of decline, and 616.5 feet of raising. There were no plant nor concentrator changes. Average manpower for the year was 126 persons, including catering, trucking, and development contractors, with turnover for the year at a rate of 471 per cent.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 81-88; 1973, p. 478.

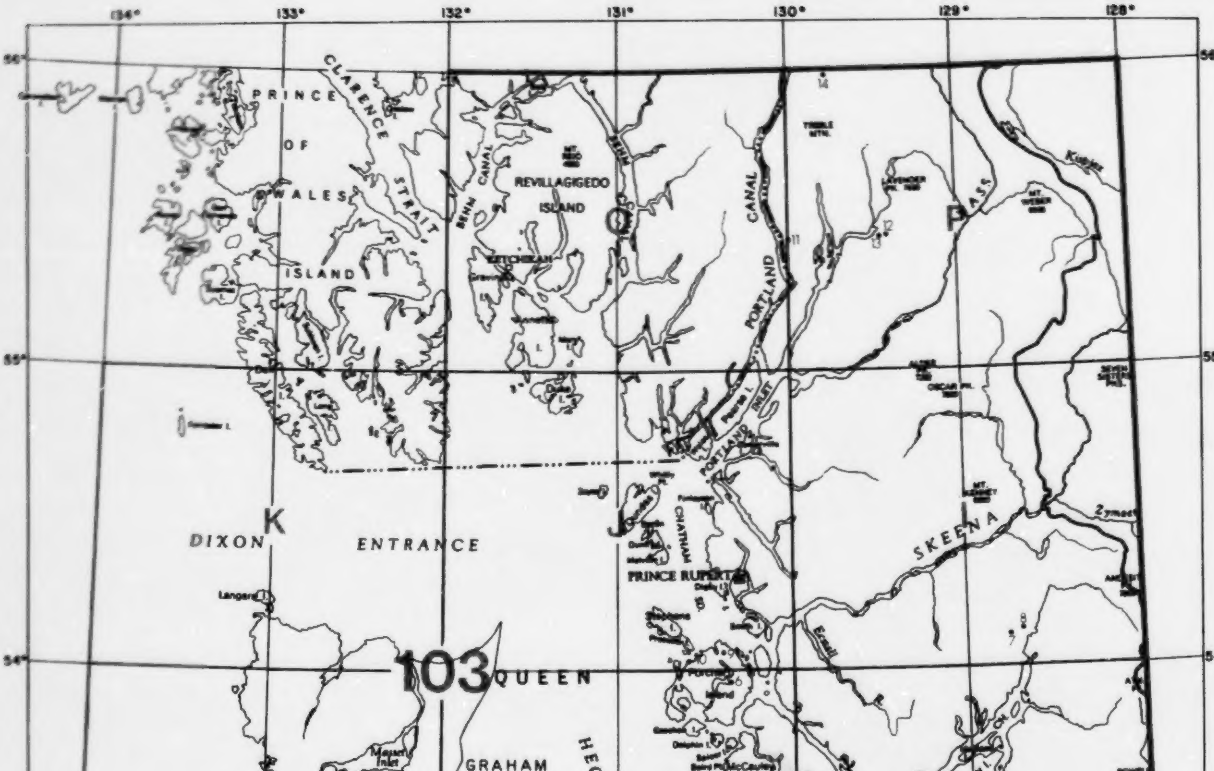

134°
133°
132°
131°
130°
129°
128°
56°
55°
54°
53°
52°
PRINCE OF WALES ISLAND
CLARENCE STRAIT
BEHM CANAL
REVILLAGIGEDO ISLAND
KETCHIKAN
PORTLAND CANAL
PORTLAND INLET
PASS
Kispiox
O
P
K
J
I
DIXON ENTRANCE
CHATHAM
PRINCE RUPERT
SKEENA
Zymoetz
103
QUEEN
GRAHAM ISLAND
HECATE
Masset Inlet
Langara I.
F
G
H
CHARLOTTE
Banks
MORESBY ISLAND
Louise I.
ISLANDS
STRAIT
C
B
A
Estevan Group
CAAMANO SOUND
LAREDO SOUND
MILBANKE SOUND
Princess Royal I.
Kunghit I.
Cape St. James
13
14
16
12
11
5
6
4
3
2
8
7
Kilometres
50
0
50
Miles
20
10
0
20
40

Figure F. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 103

KEY TO PROPERTIES ON INDEX MAP, FIGURE F.

1. GARNET, page 321.
2. BABE, page 322.
3. HOMESTAKE (CUMSHEWA), page 322.
4. BELLA, MARINO, page 323.
5. BANK, BANKER, page 323.
6. BLUE JAY, page 323.
7. BOWBYES, JOAN, page 324.
8. CHELAN, page 324.
9. ETTA, page 324.
10. EDYE PASS, SURF POINT, page 325.
11. MAPLE BAY (OUTSIDER VEIN), page 325.
12. BRITISH COLUMBIA MOLYBDENUM MINE, page 326.
13. LIME, page 326.
14. WINDSOR, BLACK BEAR, page 326.
15. TASU MINE, page 320.

WEST CENTRAL BRITISH COLUMBIA
(NTS Division 103 Figure F)

MORESBY ISLAND 103B, C

TASU MINE **(103B-C-5, 7, 56)** **(Fig. F, No. 15)** By B. M. Dudas

LOCATION: Lat. 52° 45' Long. 132° 03' (103C/16E)
SKEENA M.D. On the south side of Tasu Sound, Moresby Island, extending from sea level to 3,000 feet elevation.

CLAIMS: Twenty-one Crown-granted and 83 located claims; the key claims are: BLUEBIRD, ELIZABETH, TASSOO, WARWICK, and WEST JACK.

OWNER: WESFROB MINES LIMITED, 504, 1112 West Pender Street, Vancouver; mine office, Tasu; mine manager, K. Blower.

METALS: Iron, copper (production shown on Table 6).

DESCRIPTION:

The orebody is a contact metasomatic iron-copper deposit. A folded and tilted panel of stratified rocks is surrounded and underlain in part by the northern end of the San Christoval batholith.

Karmutsen andesitic and basaltic lava flows are conformably overlain by the Kunga Formation (limestone), which is up to 600 feet thick.

Zone 1 orebody is a replacement of feldspar porphyries that have been intruded along the limestone contact. The orebody is very irregular, and consists of lenses of copper-free magnetite.

Zone 3 is massive, with one large sausage-like orebody lying along the limestone-volcanic contact. This zone differs from zone 1 in that it is a replacement of limestone, it is more uniform in its configuration, and it contains approximately 0.75 per cent finely dispersed chalcopyrite.

Zone 2 is a transition in setting from that of zone 1 on the north to zone 3 on the south. Portions of this orebody also contain chalcopyrite mineralization.

WORK DONE:

The magnetite and chalcopyrite orebodies are mined in three open pits on a two-shift, six-day schedule. Equipment used in the open pits is: one BE-150B electric shovel, one BE-88B diesel shovel, two 988 Caterpillar loaders, two D-8 Caterpillar tractors, two BE-40R electric drills, two Airtrac drills, and five Caterpillar 769-B 35-ton ore haulage trucks.

The 3 zone pit, at the highest mining elevation, has its bottom working level 880 feet above sea level. Working faces are 35 feet high with the final pit wall made up of two bench heights (70 feet) and a berm, developing an overall pit wall slope of 50 degrees. Pre-shear blasting, on the top 35 feet of each wall, is done with 30-inch drill spacing to maintain stable final pit walls. Mining in 3 zone was minimal in 1974.

In 2 zone pit, mining continued at an overall slope of 65 degrees. In this pit, three bench heights and a berm make up the final pit wall, with the top bench being pre-sheared in the manner of 3 zone. During the year mining progressed from the 850 through the 815, 780, and 745 to the 710 bench. Minor difficulties were experienced with wedge failures on the lower two walls at 920 and 815 elevations.

In 1 zone pit, mining progressed to the 150-foot bench, the lowest elevation in the mine to date.

Ore from the pits is conveyed to the crusher via a system of ore passes which also serve as ore pockets. From 3 zone, the ore pass terminates at the 650 level haulage adit where it is transferred by rail car to the primary crusher ore pass system. Ore from 2 zone is routed through the haulage adit system or through an ore pass directly to the crusher. Ore from 1 zone is trucked directly to an ore pass feeding the crusher.

The average daily production from the three pits was 8,000 tons with a waste to ore ratio of 0.34:1 (cubic yards:tons).

A crosscut from the drift was completed to the 3 zone stope. In addition, development of a sill drift, draw points, and a slot raise was completed. Mining was deferred until 1975.

Equipment in use underground was: one 988 loader (with catalytic exhaust scrubber), one 3-boom drill jumbo, one 1,400-cubic-foot-per-minute stationary compressor, and a diesel locomotive (with an 80-ton ore car).

In a further underground programme, a portal was developed at the 220-foot elevation of 1 zone for initiation of a decline (14 by 18 feet) to the Dela-Blujay zone.

The primary and secondary crushing plants operated on a two-shift, six-day weekly schedule. The concentrator operated on a three-shift, seven-day schedule.

At the end of December, 175 were employed in operations. The company maintains Tasu, a townsite on Gowing Island, connected by causeway to the mine and plant area. Modern single-family houses, townhouses, and apartments are available for married personnel. Two modern single men's residences and a hotel are available for single personnel. A medical doctor and a full-time nurse reside in the townsite. A well-equipped medical clinic, a school to Grade 10, and a recreational complex with indoor swimming pool are maintained by the company.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, pp. 54-56; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, pp. 482-484; *B.C. Dept. of Mines & Pet. Res.,* Bull. 54, pp. 183-189.

GARNET (103B-C-6) (Fig. F, No. 1)

LOCATION:	Lat. 52° 46′ Long. 132° 01′ (103C/16E) SKEENA M.D. Tasu Sound, on the northen end of the peninsula between Fairfax Inlet and Botany Inlet, between 400 and 600 feet elevation.
CLAIMS:	GARNET 1 to 12, 14 to 58, RUBY 1 to 4.
OWNER:	Moresby Mines Limited.
OPERATOR:	THE DOWA MINING CO., LTD., 1102, 1111 West Hastings Street, Vancouver.
METALS:	Copper, molybdenum, iron, zinc.
DESCRIPTION:	Copper and molybdenum mineralization occurs in granodiorite, while magnetite, chalcopyrite, and sphalerite-bearing skarn and vein deposits are present in and adjacent to Kunga limestone.

(103F/9E)

WORK DONE: Surface diamond drilling, three holes totalling 706 feet on Garnet 1 and 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 497.

GRAHAM ISLAND 103F and parts of 103 G, J, and K

BABE (103F-G-34) (Fig. F, No. 2)

LOCATION: Lat. 53° 32′ Long. 132° 13′ (103F/9E)
SKEENA M.D. Eleven miles south of Port Clements, on the north side of Yakoun River, at approximately 500 feet elevation.

CLAIMS: BABE 1 to 32, RIC 1 to 12, RIC 20 to 26 Fractions, BRE 1 to 50.

OWNER: E. Specogna.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215 Two Bentall Centre, Vancouver.

METAL: Gold.

DESCRIPTION: Drill holes intersected a Tertiary sequence including siliceous hornfels, porphyritic rhyolite, pebble conglomerate, and siltstone. Quartz veins containing auriferous pyrite occur in siliceous hornfels.

WORK DONE: Claims and surface workings surveyed and old grid resurveyed covering Babe 5 to 12; surface geological mapping, 1 inch equals 500 feet covering all claims and 1 inch equals 100 feet covering Babe 5-12 and Ric 24 and 25 Fractions; percussion drilling, 18 holes totalling 2,077 feet and packsack diamond drilling, four holes totalling 191 feet covering Babe 6, 7, 11, and 12; road construction, 1 mile (to drill sites); trenching, 1,400 feet covering Babe 5-12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 497, 498; Assessment Report 5284.

HOMESTAKE (CUMSHEWA) (103F-G-10) (Fig. F, No. 3)

LOCATION: Lat. 53° 03′ Long. 131° 44′ (103G/4E)
SKEENA M.D. On the north side of Cumshewa Inlet, east side of Moresby Island, between 500 and 1,000 feet elevation.

CLAIMS: CHAR 1 to 32.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver V7X 1M4.

METALS: Gold, antimony.

DESCRIPTION: The claims are underlain by fragmental andesitic volcanic rocks of the Middle Jurassic Yakoun Formation. Finely disseminated gold and stibnite occur in a quartz vein stockwork and quartz-filled breccia in silicified andesites or dacites.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and 1 inch equals 100 feet; geochemical silt survey, 173 samples covering all claims.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1908, p. 62; 1913, p. 98; 1932, p. 46.

BELLA, MARINO (103F-G-35) (Fig. F, No. 4)

LOCATION: Lat. 53° 04′ Long. 131° 42′ (103G/4E)
SKEENA M.D. Three miles southeast of Heather Lake and 12 miles south-southeast of Sandspit, on the east side of Moresby Island, at approximately 1,000 feet elevation.

CLAIMS: BELLA 1 to 24, MARINO 1 to 18.

OWNER: E. Specogna.

OPERATOR: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.

METAL: Antimony.

DESCRIPTION: Rhyolite, rhyolite porphyry and breccia, dacite, and andesite contain disseminations and stringers of pyrite, arsenopyrite, and stibnite.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet, 1 inch equals 50 feet, and 1 inch equals 20 feet; magnetometer survey, 28 line-miles, 200 by 800-foot grid spacing; geochemical soil, stream sediment, and rock survey, 28 line-miles, 549 samples taken on the Bella claims and 317 samples taken on the Marino claims at various grid spacings; topographic mapping; trenching, 75 feet; surface diamond drilling, two AX holes totalling 484 feet on Bella 4.

REFERENCES: Assessment Reports 500, 5333.

DOUGLAS CHANNEL 103H and part of 103G

BANK, BANKER (103H-G-38) (Fig. F, No. 5)

LOCATION: Lat. 53° 21′ Long. 130° 09′ (103G/8E)
SKEENA M.D. On the coast of Banks Island, approximately 1 mile northeast of Foul Bay, at approximately 50 feet elevation.

CLAIMS: BANK 1 to 4, BANKER 5 to 13, 15 to 50, 65 to 72, 74 to 87, 127 to 129, 134 to 153, 164 to 166, 167B, 168B, 200 to 227.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Gold.

DESCRIPTION: Auriferous pyrite and arsenopyrite occur as fracture fillings and replacements in granitic and sedimentary rocks.

WORK DONE: Geochemical soil survey, 348 samples taken at 20-foot intervals along six selected lines covering Bank 1-3 and Banker 141.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 484; Assessment Report 5022.

BLUE JAY (103H-G-37) (Fig. F, No. 6)

LOCATION: Lat. 53° 57′ Long. 130° 20′ (103G/16W)
SKEENA M.D. At the east end of the east arm of Porcher Inlet (Kitkatla Inlet), Porcher Island.

CLAIMS: FAY 1 to 8.

(103I/2)

OWNERS: SILVER CHIEF MINERALS LTD. and FIVE STAR PETROLEUM & MINES LTD., Edmonton House, Edmonton, Alta.

METAL: Molybdenum.

DESCRIPTION: An old shaft exposes molybdenite along the contact between metasedimentary and granitic rocks of the Coast Plutonic Complex.

WORK DONE: Surface geological mapping covering all claims; VLF EM survey, approximately 1 line-mile covering Fay 1-4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 498; Assessment Report 5045.

PRINCE RUPERT – TERRACE 103I and part of 103J

BOWBYES, JOAN (103I-J-104, 172) (Fig. F, No. 7)

LOCATION: Lat. 54° 06′ Long. 128° 45′ (103I/2)
SKEENA M.D. Three and one-half miles northwest of the Kitimat bridge, on the eastern slope of Mount Clague, at approximately 2,500 feet elevation.

CLAIMS: BOWBYES 1 to 6, JOAN 2.

OWNER: BOWBYES MINES LTD., 1767 Ingledew Street, Prince George.

METALS: Copper, iron, (silver).

WORK DONE: Trenching, 400 square feet and stripping, 20 by 12 by 8 feet on Bowbyes 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 485.

CHELAN (Fig. F, No. 8)

LOCATION: Lat. 54° 07′ Long. 128° 40′ (103I/1E)
SKEENA M.D. Three and one-half miles north of Kitimat bridge, 1 mile west of the Canadian National Railway line.

CLAIMS: CHELAN 19 to 28.

OWNER: BILLY GOAT CREEK MINES LTD., 736 West 16th Avenue, Vancouver.

WORK DONE: Linecutting, 16 miles of grid covering Chelan 19-28.

REFERENCE: Assessment Report 5157.

ETTA (103I-J-171) (Fig. F, No. 9)

LOCATION: Lat. 54° 03′ Long. 130° 25′ (103J/1W)
SKEENA M.D. On the east side of Hunt Inlet, northwest corner of Porcher Island, at approximately 200 feet elevation.

CLAIMS: ETTA 1 to 24, 17 to 42, ZAP 1 to 3.

OWNER: Yukonadian Mineral Explorations Limited.

OPERATORS: HUDSON BAY EXPLORATION AND DEVELOPMENT COMPANY LIMITED and ANGLO AMERICAN CORPORATION OF CANADA EXPLORATION LIMITED, 1695, 555 Burrard Street, Vancouver.

(103J/2E)

METALS: Copper, zinc, (silver, gold).

DESCRIPTION: The claims are underlain by a mixed sequence of greenstone, quartz-cordierite hornfels, and marble, in contact with a granitic stock. Basalt, diorite, and gabbro dykes intrude the volcanic and sedimentary rocks. Sphalerite and chalcopyrite occur in skarn zones, quartz veins, and shear and fracture zones in metavolcanic rocks.

WORK DONE: Surface diamond drilling, seven AQ holes totalling 1,765 feet on Etta 16.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 487, 488; Assessment Report 5027.

EDYE PASS, SURF POINT (103I-J-1, 2) (Fig. F, No. 10)

LOCATION: Lat. 54° 01′ Long. 130° 35′ (103J/2E)
SKEENA M.D. At the northwest end of Porcher Island, on the south side of Edye Passage, between sea level and 500 feet elevation.

CLAIMS: REWARD (Lot 6955), PIRATE (Lot 6953), NABOB (Lot 7192), JEANNIE (Lot 7191), WESTERN HOPE (Lot 6516), TRIXIE (Lot 6515) Crown-granted claims plus TIPPY, TOBY 1 and 2, KERRY located claims.

OWNER: PORCHER ISLAND GOLD MINES LTD., 1131 Jackson Way, Delta.

METALS: Gold, silver, copper.

DESCRIPTION: Gold is associated with pyrite in quartz fissure veins.

WORK DONE: Limited mapping and sampling on Western Hope and Trixie.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1934, pp. B6-B8; 1938, p. B26; Structural Geology of Canadian Ore Deposits, *C.I.M.*, Jubilee Volume, 1948, pp. 94-99.

NASS RIVER 103P and part of 103O

MAPLE BAY (OUTSIDER VEIN) (103P-O-30) (Fig. F, No. 11)

LOCATION: Lat. 55° 26′ Long. 130° 00′ (103P/5W, 103O/8E)
SKEENA M.D. On the east side of Portland Canal, at Maple Bay, between 1,000 and 1,500 feet elevation.

CLAIMS: PRINCESS MAY, PRINCESS ALEXANDRIA, STAR, REGINA, COPPER KING, HOPE, BROWN, CONSTANCE FR., TUNNEL FR., BLUEBELL, ROSE, THISTLE, MAY QUEEN, EAGLE, SCOTLAND FOR EVER FR., DUCK FR., COMSTOCK, ANACONDA, GERTIE, LIZZIE, MAPLE BAY FR., COMSTOCK FR. (Lots 489, 500, 562, 564 to 569, 571, 575 to 579, 938, 2877 to 2882) Crown-granted claims and OB 1 to 14, 16 to 21 and OS 1 to 18 located claims.

OWNER: CONSOLIDATED MAPLE BAY MINES LIMITED, 1710, 1177 West Hastings Street, Vancouver V6E 2L3.

METALS: Copper, gold, silver.

WORK DONE: Underground work, 280 feet on Outsider 1295 level.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 502.

BRITISH COLUMBIA MOLYBDENUM MINE (103P-O-120) (Fig. F, No. 12)

LOCATION: Lat. 55° 25′ Long. 129° 26′ (103P/6W)
SKEENA M.D. Four miles southeast of the head of Alice Arm Inlet, on Patsy Creek, a fork of Lime Creek, at approximately 2,000 feet elevation.

CLAIMS: Mineral Leases M-157 to M-191, including the key claims PATRICIA 1 to 5, and the located claims JAN, JOY, ACCESS, etc., totalling 98.

OWNER: CLIMAX MOLYBDENUM CORPORATION OF BRITISH COLUMBIA, LIMITED, c/o Davis and Company, 1030 West Georgia Street, Vancouver V6E 3C2.

METAL: Molybdenum.

DESCRIPTION: A stockwork of molybdenite veins is concentrated within and adjacent to a Tertiary quartz monzonite-granodiorite stock intruding Jurassic siltstones and greywackes.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet and surface diamond drilling, 17 holes totalling 11,297 feet covering the pit area.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1964, pp. 30-36; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 489.

LIME (Fig. F, No. 13)

LOCATION: Lat. 55° 25′ Long. 129° 27′ (103P/6W)
SKEENA M.D. Three and one-half miles south of Alice Arm, on Mohawk Mountain, at approximately 3,000 feet elevation.

CLAIMS: FAST 1 to 22.

OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

DESCRIPTION: Interbedded greywackes and argillaceous siltstones of Upper Jurassic underlie the claim group in a northerly trending anticline.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet and geochemical soil survey, 486 samples, 19 line-miles, 200 by 400-foot grid spacing covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 506.

WINDSOR, BLACK BEAR (103P-O-79, 78) (Fig. F, No. 14)

LOCATION: Lat. 55° 57′ Long. 129° 46′ (103P/13W)
SKEENA M.D. Nine miles east-northeast of Stewart, 2 miles east of Mount Dickie, at approximately 3,700 feet elevation.

CLAIMS: WINDSOR (Lot 5398), WINDSOR FR. (Lot 5407), WINDSOR 2 (Lot 5399), LAURA (Lot 5400), LAST CHANCE (Lot 5401), RAVEN 1 to 4 (Lots 5402 to 5405), RAVEN FR. (Lot 5406) Crown-granted claims.

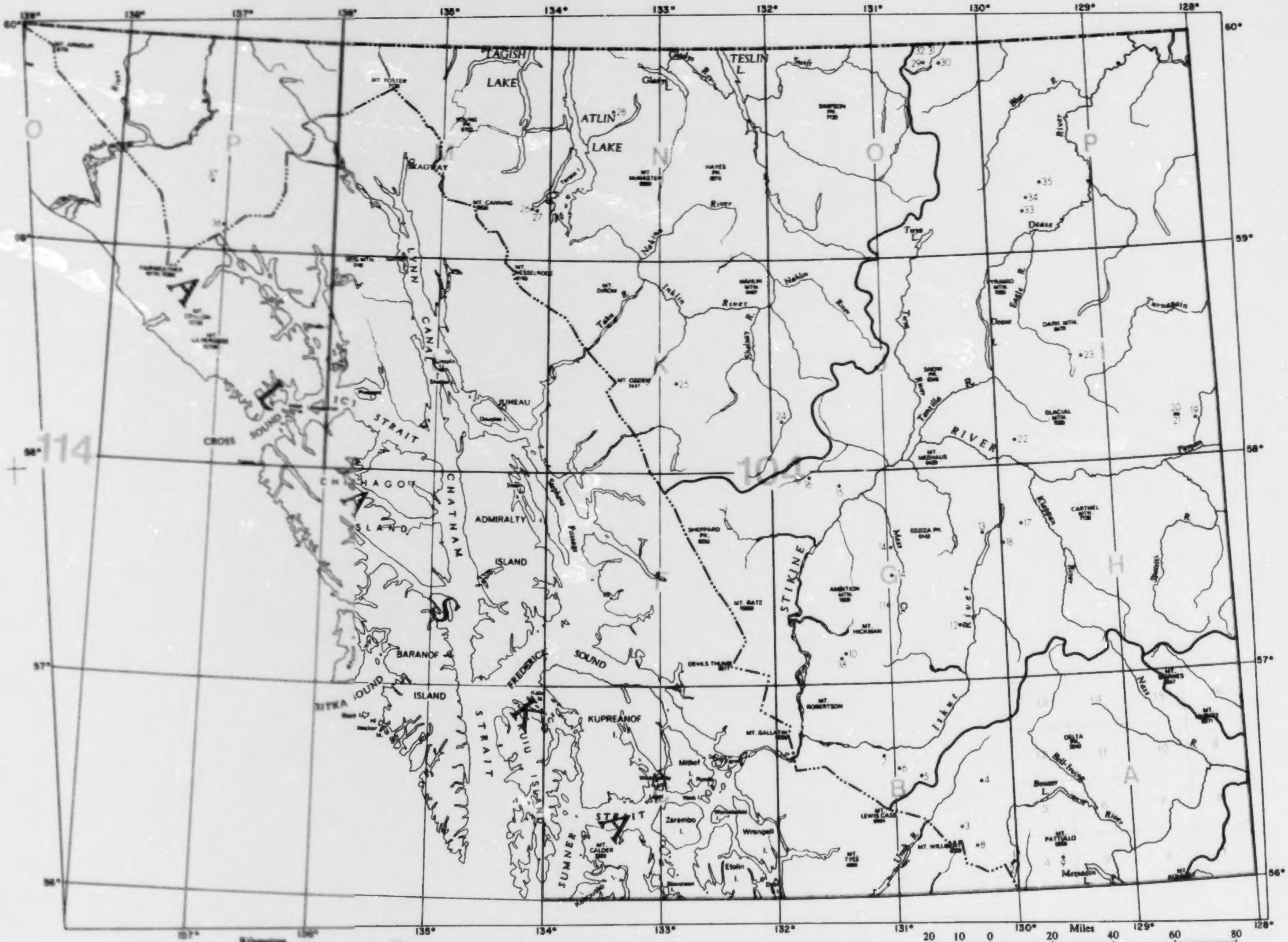
OWNER: TOURNIGAN MINING EXPLORATIONS LTD., 704, 535 Thurlow Street, Vancouver.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: Quartz veins containing pyrite, galena, and sphalerite occur in Jurassic siltstones and greywackes.

WORK DONE: Topographic and surface geological mapping.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1911, p. 74; 1924, pp. 68, 69; 1930, p. 107: *Geol. Surv., Canada,* Mem. 32, pp. 55, 56; Mem. 175, pp. 109, 151.


60°
59°
58°
57°
56°
139°
138°
137°
136°
135°
134°
133°
132°
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130°
129°
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LAGISH LAKE
ATLIN LAKE
TESLIN L
MT FOSTER
SKAGWAY
MT CANNING
MT NESSELRODE
LYNN CANAL
JUNEAU
CROSS SOUND
ICY STRAIT
CHICHAGOF ISLAND
CHATHAM STRAIT
ADMIRALTY ISLAND
BARANOF ISLAND
SITKA SOUND
FREDERICK SOUND
KUPREANOF I.
KUIU ISLAND
SUMNER STRAIT
Zarembo I.
Wrangell I.
Etolin I.
MT CALDER
Mitkof I.
MT OGDEN
SHEPPARD PK.
MT RATZ
DEVILS THUMB
MT GALLATIN
MT ROBERTSON
MT HICKMAN
AMBITION MTN
STIKINE
Iskut River
MT LEWIS CASS
MT TYEE
MT WILLIBERT
Unuk R.
Nakina River
Inklin River
Taku R.
Sheslay R.
Tuya R.
Tanzilla R.
Dease L.
Dease R.
Turnagain
Blue R.
Klappan River
Nass R.
Bell-Irving River
Bowser L.
Meziadin L.
MT PATTULLO
DARK MTN
GLACIAL MTN
MT MEHAUS
CARTMEL MTN
EDZIZA PK.
HAYES PK.
SIMPSON PK.
104
114
A L A S K A
Kilometres
Miles
20 10 0 20 40 60 80

Figure 6 INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 104 AND PART OF 114

KEY TO PROPERTIES ON INDEX MAP, FIGURE G.

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2. BIG MISSOURI, page 331.
3. GRACEY (HALPORT), page 333.
4. BIG (RAN), page 334.
5. TAMI, KIM, page 335.
6. INEL, page 335.
7. BRON, page 336.
8. GRANDUC MINE, page 332.
9. GOAT, page 330.
10. BIK (STIKINE NORTH, STIKINE EAST), page 336.
11. LIARD COPPER (BIRD, SNO), page 337.
12. MARY; ME, ROG; GREG, page 338.
13. WOLF, page 338.
14. C, IN, page 339.
15. GLENORA AND KING, page 340.
16. VB, page 339.
17. WINDY, RED, CHRIS, SUS, page 340.
18. RAM, page 340.
19. TUC, page 343.
20. JEFF, page 343.
21. SMRB, page 348.
22. BCR, SS, page 348.
23. JOY (EAGLE), page 349.
24. KID, GRIZZLY, page 349.
25. TUN, page 350.
26. MOLLY, page 351.
27. LAVERDIERE, page 350.
28. ADANAC (ADERA), page 351.
29. PCP, page 352.
30. SILVERTIP, page 352.
31. LUCK, page 353.
32. HOLLIDAY-RANSON, SANDY, page 352.
33. VOLLAUG (HURRICANE, RED HILL), page 353.
34. CORNUCOPIA (BENROY, HANNA GOLD), page 354.
35. JOEM, TIBOR, page 354.
36. ALU, page 355.
37. SAC, page 355.
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NORTHWEST BRITISH COLUMBIA
(NTS Division 104 and part of 114 Figure G)

BOWSER LAKE 104A

GOAT (104A-3) (Fig. G, No. 9)

By B. M. Dudas

LOCATION: Lat. 56° 10' Long. 129° 36' (104A/4E)
SKEENA M.D. Seven miles west-northwest of the west end of Meziadin Lake, at the headwaters of Surprise Creek, between 4,500 and 5,000 feet elevation.
CLAIMS: Twelve located claims including the key claims GOAT 1 to 4.
OWNER: Noradco Mines Limited.
OPERATOR: NORDORE MINING CO. LTD., 153 Perrault Road, Val D'or, P.Q. J9P 2H1.
METALS: Silver, gold, zinc, tungsten.
DESCRIPTION:

The property lies astride a steep-sided, easterly trending ridge about 2.5 miles long. The country rocks in the mine area are schistose green andesitic agglomerates and intercalated siltstones of the Hazelton Group.

The main Goat mineralization consists of the F vein, G vein, and E vein. The F vein is the original discovery and appears to constitute the best mineralization. The sulphide mineralization is sphalerite, arsenopyrite, pyrite, galena, and freibergite included in a siderite gangue with accessory quartz, epidote, minor calcite, and scheelite. The F vein, which has been most fully explored, trends northerly, is steeply west dipping, and has an average width of about 6 inches.

WORK DONE:

Work commenced on the property in early June and consisted of improving the 7-mile access road which connects the mine to the Stewart-Cassiar Highway at Surprise Creek, rebuilding the surface manway along the skipway, and rehabilitating old workings. Previous underground work on the property was done in 1968. Underground development and exploration which started in July consisted of 398 feet of crosscutting and drifting, mostly on the 4625 level, and 68 feet of raising on the 4750 level. Mine development work comprised 68 feet of crosscutting and drifting on the 3900 and 4625 levels and 375 feet of raising on the 4500 and 4625 levels. In addition, development slashing amounted to 13,000 cubic feet.

During September, a 36 by 24-inch Canadian Ingersoll Rand hoist was installed on the 4500 level but the hoist electrical installation was not completed.

Because of weather conditions (24-inch snowfall on the night of September 29), the project closed for the winter on September 30. and the camp facilities and equipment were moved to Stewart for storage. An average of 16 persons, including 10 miners, was employed during the four-month work period.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1965, pp. 55-57; 1968, p. 51.

ISKUT RIVER 104B

BIG MISSOURI (104B-46) (Fig. G, No. 2)

LOCATION: Lat. 56° 07′ Long. 130° 01′ (104B/1E)
SKEENA M.D. Twelve miles north of Stewart, on the west side of Silver Creek, at approximately 3,200 feet elevation.

CLAIMS: BIG MISSOURI (Lot 3217), PROVINCE (Lot 3208), MARTHA ELLEN (Lot 1521), LECKI FR. (Lot 1525), WINER (Lot 3212), BUENA VISTA (Lot 3207), JAIN (Lot 3209), WIN FR. (Lot 3224) surveyed claims.

OWNER: Consolidated Silver Butte Mines Ltd.

OPERATOR: GIANT MASCOT MINES LIMITED, 705, 850 West Hastings Street, Vancouver.

METALS: Gold, silver, lead, zinc, copper.

DESCRIPTION: The country rocks include medium-grained epiclastic volcanic conglomerates of Early Jurassic age cut by quartz stringers and in turn by Tertiary hornblende granodiorite and lamprophyre dykes.

WORK DONE: Surface geological mapping and surface diamond drilling, 11 holes totalling 822 feet on Province (Lot 3208); road construction, 4 miles (graded).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 73; 1972, pp. 513, 514 (Martha Ellen); *B.C. Dept. of Mines & Pet. Res.*, Bull. 58, pp. 97, 108, 124-126.

UNICORN (104B-44)

LOCATION: Lat. 56° 08′ Long. 130° 01′ (104B/1E)
SKEENA M.D. Twelve miles north of Stewart, adjoining the Big Missouri mine on the northeast, at approximately 3,500 feet elevation.

CLAIMS: UNICORN (Lot 4534), UNICORN 2 and 3 (Lots 4535, 4536), UNITY (Lot 4537), UNITY FR. (Lot 4542), SNOW KING (Lot 4539), H&W FR. (Lot 4541), V FR. (Lot 4543), UNION FR. (Lot 3215), TIP TOP FR. (Lot 4180), SILVER CREEK FR. (Lot 4560), GOOD HOPE (Lot 4538).

OWNER: Unicorn Mines Limited.

OPERATOR: TOURNIGAN MINING EXPLORATIONS LTD., 704, 535 Thurlow Street, Vancouver V6E 3L2.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: Quartz-carbonate veins carrying significant tetrahedrite and other sulphides are found as fracture fillings in members of the Tertiary Portland Canal dyke swarm and in adjacent thin-bedded siltstone units comprising part of the Middle Jurassic Salmon River Formation.

WORK DONE: Preliminary surface geological mapping of Good Hope; topography and surface and underground workings surveyed; channel sampling of No. 3 tunnel (Good Hope); road repaired, 1.5 miles between Good Hope and Unit claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1930, pp. 114, 115; 1950, p. 78; *B.C. Dept. of Mines & Pet. Res.,* Bull. 58, pp. 126, 166; *Geol. Surv., Canada,* Mem. 175, p. 170.

GRANDUC MINE (104B-21) (Fig. G, No. 8)

By B. M. Dudas

LOCATION: Lat. 56° 13′ Long. 120° 21′ (104B/1W)
SKEENA M.D. The mine is at the head of the Leduc River, 25 miles north-northwest of Stewart, between 1,800 and 4,000 feet elevation. The concentrator and campsite are at Tide Lake; the townsite is at Stewart.

CLAIMS: One hundred and sixty-four Crown-granted and 186 located claims.

OWNER: Granduc Mines, Limited.

OPERATOR: GRANDUC OPERATING COMPANY, 520, 890 West Pender Street, Vancouver; mine address, Box 69, Stewart; R. S. Mattson, resident manager.

METALS: Copper, silver (production shown in Table 6).

DESCRIPTION:

In summary, the mineral occurrence is within a cataclasite zone which is overlain on the east by easterly dipping volcanic conglomerates, thick pillow volcanic units, and minor intercalated sedimentary rocks. It is about 1 mile east of the contact of the Coast Plutonic Complex.

Chalcopyrite, along with pyrite, pyrrhotite, and sphalerite in a gangue of quartz and country rock, occurs in streaks, blebs, and irregular massive lenses. The ore zone extends at least 2,500 feet vertically and 4,000 feet laterally.

WORK DONE:

The basic method of mining is sublevel caving, however, during the year mechanized cut-and-fill mining methods were being evaluated. Transverse sublevel cave production was phased out on 3140 sublevel in No. 1 block in favour of multilongitudinal sublevel cave, which is also the method used in No. 2 block.

The results of a mechanized cut-and-fill method were evaluated during the year. At year end, plans were being made to switch from a conventional cut-and-fill method to a method used by Avoco Mines in Ireland. For back-fill, development waste will be utilized.

Custom built utility tracked Jumbos, for rock bolting and other services, and Ford 440 tractors, to replace the 411 Unimogs, were successfully introduced. A total of 46 diesel-driven trackless equipment vehicles were in use at year end, of which 18 were ST-5A Wagner load-haul-dump units.

The total underground development for the year was 55,024 feet. Drifts, crosscuts, and service ramps for trackless development was 52,832 feet. This included 4,936 feet of ramp, diamond-drill drifts, and access crosscuts in No. 4 block below 2600 level. Slot and miscellaneous raising was 523 feet. Bored raising was 1,669 feet and miscellaneous excavations in waste amounted to 22,734 cubic feet. Underground diamond drilling for ore definition totalled 40,761 feet. Tonnage of ore milled was 2,708,731 tons, producing 113,408 tons of concentrate.

At year end, No. 1 block was producing from 3065, 3020, and 2975 levels with development continuing on 2885, 2840, 2795, and 2750 levels. In No. 2 block, 3390, 3345, 3300, and 3255 levels were in production and 2985, 2895, and 2850 levels were being developed. In No. 1 block, No. 4 ramp was completed during the year and No. 3 ramp in No. 2 block had been advanced down to 2760 level. A footwall drift on 2660 level was being advanced from No. 100 crosscut and No. 4 ramp to connect No. 3 ramp at No. 118 section for access purposes; however, due to cutback, this drift has not been completed. Exploration work in No. 4 block below 2600 level was progressing, with No. 6 ramp advanced to a point below 2130 level; footwall diamond-drill drifts were excavated on 2220 and 2265 levels, and the ore intersected by crosscuts on 2265 and 2130 levels. By year end, several diamond-drill holes had been completed from the diamond-drill drifts.

The primary jaw crusher is located underground on 2475 level. The minus 7-inch crushed ore is trammed in 50-ton ore cars for a distance of 10 miles to the secondary crusher at Tide Lake. The ore train consists of 17 ore cars and two Mitsubishi 40-ton electric locomotives. The power supply for the locomotives is via a 1,500-volt Caternary system.

A scrubbing circuit is being installed between the primary screen and the secondary crusher. At year end, the structural steel members were erected, however, due to production cutback this project was shelved.

The method of concentration is to crush to 50 per cent minus ½-inch, feed to rod mills for primary grinding then to pebble and ball mills for secondary grinding. The pebble and ball mill discharge at 60 per cent minus 200 mesh goes through flotation, thickening, filtering, and drying processes. The concentrator throughput averaged 7,421 tons per day.

The present ventilation system consists of two 300-horsepower incasting fans at 3200 level portal and one 100-horsepower incasting fan at 2600 level portal. At year end, the installation of a 300-horsepower exhaust fan at 2810 portal was near completion.

Pollution control permits were obtained for the refuse dumps. The testing procedure for emissions to atmosphere were being conducted in accordance with recognized procedures. Studies were in hand to check the sewage treatment system at Tide Lake.

A five-man Snow Control Team is employed during the winter months to supervise snow removal and avalanche protection on the 32-mile road between the concentrator site and Stewart and at the mine portals at Leduc.

On December 6, due to low copper price and economic uncertainties, a production cutback was announced. Total manpower at December 31 was 672, including contractors, down from a total of 876 at November 30, 1974.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, pp. 46-50; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, pp. 54-56; 1970, pp. 68-70; 1973, pp. 497-499.

GRACEY (HALPORT) (104B-14) (Fig. G, No. 3)

LOCATION: Lat. 56° 20′ Long. 130° 28′ (104B/8W)
SKEENA M.D. Between Gracey Creek and the south fork of Unuk River, opposite Divelbliss (Cabin) Creek, between 4,000 and 4,400 feet elevation.

(104B/9)

CLAIMS: DOC 1, 3, 4, 11 to 15, 17, 19, 21.

OWNERS: New Minex Resources Ltd. and Thomas J. McQuillan.

OPERATOR: NEW MINEX RESOURCES LTD., 210, 470 Granville Street, Vancouver V6C 1V5.

METALS: Gold, silver, lead, copper.

DESCRIPTION: The claims are underlain by limestone, argillite, siltstone, and tuff members of the Lower Jurassic Unuk River Formation (Hazelton Group). These rocks have been intruded by a small plug of diorite and by various dykes, and injected by quartz veins striking northwest and dipping approximately 60 degrees to the northeast. The veins carry hematite, pyrite, galena, sphalerite, and free gold, which tend to concentrate along the margins.

WORK DONE: Magnetometer survey, 6.7 line-miles and 16 channel samples taken across an aggregate vein width of 129 feet covering DOC 1, 3, 4, 13, 19, and 21.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1949, p. 73 (Halport Mines Ltd.); Assessment Report 5239.

BIG (RAN) (104B-12, 103, 104, 105) (Fig. G, No. 4)

LOCATION: Lat. 56° 32' Long. 130° 15' (104B/9)
SKEENA M.D. Nine miles east of the confluence of Sulphurets Creek and Unuk River, on a ridge between Sulphurets Glacier and Mitchell Glacier, from 2,000 to 6,000 feet elevation.

CLAIMS: RAY 1 to 14, 19, 20, 22, RAY Y Fraction, TED 1 to 4, 6, 15 to 19, 31, TED 32 Fraction, MITCH 1 to 3, 5 to 16, RAN 7 to 14, 16, 18, 19, 40 to 50, PATTY 1 to 5, LEE 1 to 4.

OWNER: GRANDUC MINES, LIMITED, 2009, 1177 West Hastings Street, Vancouver V6E 2K3.

METALS: Copper, molybdenum.

DESCRIPTION: Disseminated chalcopyrite occurs in schistose, siliceous, and pyritic shear zones, in andesitic epiclastic volcanic rocks, and to a limited extent in syenitic and monzonitic intrusive rocks. Minor molybdenite is present. Epiclastic volcanic and siliceous sedimentary members of the Lower Jurassic Unuk River Formation have been altered by Middle Jurassic syenitic intrusions and by extensive hydrothermal alteration. Pervasive pyritization has resulted in a conspicuous gossan zone.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet (secondary – while grid sampling in progress) and geochemical survey, 571 samples (bedrock grid sampling), one sample every 400 by 400 feet covering all claims except Ran 7-14, 16, 18, 19 and Mitch 6, 8, and 10; trenching, 50 feet on Patty 1.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, pp. 45, 46; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 515, 516 (Ted, Ray).

TAMI, KIM (104B-116, 117) (Fig. G, No. 5)

LOCATION: Lat. 56° 34′ Long. 130° 46′ (104B/10W)
LIARD M.D. Nine miles south-southeast of the confluence of Snippaker Creek and Iskut River, at approximately 4,500 feet elevation.

CLAIMS: KIM 2, 4, 6, 8, 10, 12 to 36, TAMI 1 to 37, PONCHO 1 to 6.

OWNER: GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD., 736 Eighth Avenue SW., Calgary, Alta.

METALS: Copper, lead, silver.

DESCRIPTION: On the Kim claims Triassic flows and pyroclastic rocks are engulfed by Cretaceous granodiorite. Similar rocks occur on the Tami claims, where they are intruded by felsite. Pyrite is widely and generally thickly disseminated through the rocks. A small high-grade showing near the centre of the Tami claims consists of chalcopyrite, bornite, chalcocite, covellite, and pyrite in varying amounts. The Snow zone on the northern part of the Kim claims consists of variable amounts of chalcopyrite, pyrite, and malachite, with local galena and barite, associated with a quartz stockwork.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Kim 2, 4, 6, 8, 10, 12-26 and Tami 20, 25-32, 37; linecutting, 5 miles of grid; study of 15 thin sections; time-domain IP survey, 8.5 line-miles and magnetometer survey, 11.5 line-miles covering Tami 1-24 and 33-36.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 500; Assessment Reports 3981, 5142.

INEL (104B-113) (Fig. G, No. 6)

LOCATION: Lat. 56° 36′ Long. 130° 57′ (104B/10W)
LIARD M.D. Five miles southeast of the confluence of Bronson Creek and Iskut River, between 4,000 and 6,000 feet elevation.

CLAIMS: INEL 7 to 72, HIHO 1 to 16.

OWNER: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METALS: Copper, zinc, lead, gold, silver, molybdenum.

DESCRIPTION: The property is underlain by a sequence of volcanic and sedimentary rocks of the Upper Triassic-Lower Jurassic Stewart Complex, peripheral mainly to quartz monzonite Coast Plutonic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet (checking previous mapping); geochemical silt survey, 19 samples covering Inel 25, 26, and 41-44; trenching, 130 feet on Inel 43 and 45.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 501; Assessment Report 5274.

BRON (104B-4) (Fig. G, No. 7)

LOCATION: Lat. 56° 39′ Long. 131° 04′ (104B/11E)
LIARD M.D. Two miles south of the confluence of Bronson Creek and Iskut River, between 500 and 5,000 feet elevation.

CLAIMS: QUINELLA 1 to 64.

OWNER: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METALS: Copper, zinc, gold.

DESCRIPTION: Mineralization consists of chalcopyrite, pyrite, sphalerite, galena, and traces of molybdenite. Folded metasedimentary and metavolcanic rocks, of probable Paleozoic age, are overlain by Mesozoic acid and intermediate volcanic rocks and are cut by large orthoclase porphyry dykes.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP survey, 2.5 line-miles covering Quinella 1, 2, 7, 8, 10, 19, 21; geochemical silt survey, 49 samples covering Quinella 1-10, 12-16, 19-21; trenching, 50 feet on Quinella 60.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 37; Assessment Report 5275.

TELEGRAPH CREEK 104G

STIKINE COPPER (GC, HAB, BUY) (104G-16) (Fig. G, No. 38)

LOCATION: Lat. 57° 07′ Long. 131° 27′ (104G/3W)
LIARD M.D. At the headwaters of Galore Creek, at approximately 2,400 feet elevation.

CLAIMS: GC, HAB, BUY, XGO, OB, ARCHIE, and SK, totalling approximately 300.

OWNER: Stikine Copper Limited.

OPERATOR: HUDSON BAY MINING AND SMELTING CO., LIMITED, Box 28, Toronto-Dominion Centre, Toronto, Ont.

METALS: Copper, silver, gold.

DESCRIPTION: Copper deposits are associated with syenite porphyry intrusions in Upper Triassic volcanic rocks.

WORK DONE: Diamond-drill equipment, stored at the property over the winter, was removed and the camp closed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 520-526; 1973, pp. 501-505.

BIK (STIKINE NORTH, STIKINE EAST) (104G-67, 66) (Fig. G, No. 10)

LOCATION: Lat. 57° 09′ Long. 131° 25′ (104G/3W)
LIARD M.D. Four to 6 miles south of Scud River, at approximately 2,200 feet elevation.

(104G/6E, 7W)

CLAIMS: BIK 34 to 37, 41 to 45, 47 to 55, 57 to 61, 63 to 67, 69 to 72, 75, 76, 81, 82, 221 to 226, 235 to 242, 245 to 247, BIK 4, 6 to 8, 12 to 16, and 18 Fractions.

OWNERS: SILVER STANDARD MINES LIMITED, AMERICAN SMELTING AND REFINING COMPANY, SCURRY-RAINBOW OIL LIMITED, c/o 9th Floor, 1199 West Hastings Street, Vancouver V6E 3T5.

METAL: Copper.

DESCRIPTION: Upper Triassic volcanic and sedimentary rocks are intruded by a number of small syenite porphyry dykes. Drilling intersected a sequence of bedded tuffs and tuffaceous sedimentary rocks.

WORK DONE: Surface diamond drilling, four holes totalling 1,312 feet on BIK 221, 222, 236, and 238.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 25; Assessment Reports 5093, 5104.

LIARD COPPER (BIRD, SNO) (104G-15) (Fig. G, No. 11)

By E. W. Grove

LOCATION: Lat. 57° 22' Long. 131° 00' (104G/6E, 7W)
LIARD M.D. Seven miles southwest of Mess Lake, between 2,800 and 4,000 feet elevation.

CLAIMS: Fifty BB, four BIRD, thirty-four BUD, seven EMU, twenty-one GAV, ten ID, one hundred MESS, eight NOV, sixty-one P, eighty-eight PIT, three RUM, sixteen SNO, fifteen SUE, forty-five VON, one WIN, two XRAY, thirty-four A, one MV, seven JACK, two LL, thirteen DAVE.

OWNERS: Liard Copper Mines Ltd. and Hecla Operating Company.

OPERATOR: HECLA OPERATING COMPANY, 2099 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION:

Sulphide mineralization at Schaft Creek consists of pyrite, chalcopyrite, bornite, molybdenite, chalcocite, and covellite, roughly in order of abundance. Magnetite is significant but erratically dispersed throughout the mineral zone. Quartz, gypsum-anhydrite, epidote, calcite, sericite, and tourmaline are the main gangue and alteration minerals related to the sulphide mineralization. Pink alteration of the plagioclase feldspar in both volcanic and granitic rocks is a prominent feature of the mineral zone. Thin-section examinations show an extensive clouding of the plagioclase and alteration to a very fine-grained intimate mixture of sericite, carbonate, epidote, and some albite. The sulphide mineralization is localized in a variety of highly fractured and shattered country rocks as blebs, veins, and veinlets, at and near the margin of the Late Triasssic Hickman batholith. About 10 per cent of the known sulphide mineralization is found in these marginal granitic rocks while 90 per cent is localized in the andesitic to basaltic volcanic flows, epiclastic volcanic, and minor sedimentary rock units which comprise the local sequence. To date significant mineralization has been found in this complex contact zone over a length of about 2,000 metres (6,500 feet) and over a vertical depth of 1,000 metres (3,300 feet).

The 1974 diamond-drill programme was used to fill in the existing core hole information on the Sno 5, ID 3 Fraction, Sno 6, and Bird 1 claims. Six holes totalling 7,062.5 feet were drilled in what had been assumed a non-mineralized area in the southern part of the deposit. The drilling showed a continuity of mineralization. No other work was done on the property.

WORK DONE: Surface diamond drilling, six holes totalling 7,062.5 feet on Sno 5, ID 3 Fraction, Sno 6, and Bird 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 505, 506; Assessment Reports 5210, 5302.

MARY; ME, ROG; GREG (104G-18, 42, 70) (Fig. G, No. 12)

LOCATION: Lat. 57° 16′ Long. 129° 25′ (104G/8W)
LIARD M.D. Six miles west-northwest of junction of Ball Creek with Iskut River, between 3,000 and 5,500 feet elevation.

CLAIMS: ME 1 to 18, ROG 1 to 20, 22 to 27, 29, 31, 33 to 40, TARA 1 to 27, MENT 1 to 7, MDM 4 to 11, BARE 1 to 15, VKR 1 to 6, BR 1 to 3.

OWNER: GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD., 736 Eighth Avenue SW., Calgary, Alta.

METALS: Copper, molybdenum.

DESCRIPTION: Quartz latite porphyry, quartz monzonite porphyry, and monzonite contain chalcopyrite, molybdenite, and pyrite in quartz veinlets and in brecciated zones. Significant gold and silver mineralization may be present.

WORK DONE: Surface diamond drilling, three holes totalling 2,132 feet on Tara 17 and 19.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 506; Assessment Report 5168.

WOLF (104G-45) (Fig. G, No. 13)

LOCATION: Lat. 57° 41′ Long. 130° 10′ (104G/9E)
LIARD M.D. Two and one-half miles west of the north end of Kinaskan Lake, at approximately 4,500 feet elevation.

CLAIMS: WOLF 1 to 6.

OWNER: NUSPAR RESOURCES LTD. (formerly Spartan Explorations Ltd.), 308, 540 Burrard Street, Vancouver V6C 2K3.

METAL: Copper.

DESCRIPTION: Upper Triassic volcanic rocks are intruded by granitic rocks and a number of dykes. Chalcopyrite and pyrite as disseminations and fracture fillings are associated with north-south-trending felsite dykes.

WORK DONE: Surface geological mapping, 1 centimetre equals 50 metres covering all claims.

REFERENCE: Assessment Report 5190.

C, IN (104G-77, 80) (Fig. G, No. 14)

By E. W. Grove

LOCATION: Lat. 57° 35' Long. 130° 55' (104G/10W)
LIARD M.D. Twenty-three miles south-southeast of Telegraph Creek, between Mess and Schaft Creek, at approximately 3,500 feet elevation.

CLAIMS: IN 5, 7 to 12, 27 to 38, 57 to 64, 154, 156, 158, 173 to 175, 177, 179, 183, 185, 199, C 1 to 16, 23 to 40, 42, 51 to 64, 82, 84, 86, 88, 90, 92, OUT 1 to 18, 25, 31, 33, 35.

OWNER: HECLA OPERATING COMPANY, 2009, 1177 West Hastings Street, Vancouver V6E 2K3.

METAL: Copper.

DESCRIPTION:

Five diamond-drill holes totalling 1,514 feet were drilled to test geophysical anomalies, and to test the extension of scattered surface mineralization. Holes 1, 2, and 3 were drilled between Schaft and Mess Creeks about 5.3 kilometres (3.5 miles) north of Johnnie Lake, with 4 and 5 located at Ameoba Lake. The northerly holes intersected hornfelsed pelitic sandstone, thin augite porphyry dykes, andesite flows, and extensive massive to weakly foliated diorite. Quartz-carbonate stringers and breccias and pink altered zones comparable to Schaft Creek alteration were observed along with some graphitic material. The southerly holes intersected hornfelsed pelite, andesite, and altered pinkish diorite. Much of the general area appears to be underlain by an extensive intrusive diorite pluton that may predate the Hickman intrusion.

WORK DONE: Surface diamond drilling, five holes totalling 1,514 feet on C 13, 61 and In 34, 62.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 507.

VB (104G-81, 82, 83) (Fig. G, No. 16)

LOCATION: Lat. 57° 57' Long. 131° 40' (104G/13E)
LIARD M.D. Eighteen miles west of Telegraph Creek, on the southwest side of Tahltan Lake, at approximately 4,000 feet elevation.

CLAIMS: VB 1 to 42.

OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Copper, iron.

DESCRIPTION: Skarn mineralization containing chalcopyrite, pyrite, pyrrhotite, magnetite, and specular hematite is developed adjacent to a diorite-granodiorite stock 1 mile in diameter.

WORK DONE: Linecutting, 22.8 miles of grid; surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 21 line-miles, reading every 100 feet on lines 400 feet apart; geochemical soil survey, 314 samples taken every 200 feet on lines 400 feet apart, 10 line-miles covering VB 1-30.

REFERENCE: Assessment Report 5097.

GLENORA AND KING (104G-3) (Fig. G, No. 15)

LOCATION:	Lat. 57° 55′ Long. 131° 25′ (104G/14W) LIARD M.D. Ten miles west of Telegraph Creek, on the north side of Winter Creek, between 3,500 and 6,000 feet elevation.
CLAIMS:	KIT 1 to 26.
OWNER:	ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.
METALS:	Copper, gold, silver.
DESCRIPTION:	Steeply dipping Mesozoic lavas and pyroclastic rocks cut by felsic dykes are locally pyritized and iron stained. Chalcopyrite, pyrite, and pyrrhotite occur in small shears and 'replacement lenses' in intermediate volcanic rocks.
WORK DONE:	Surface geological mapping, 1 inch equals 400 feet covering all claims; geochemical soil survey, 89 samples (two contour lines), 3 line-miles covering Kit 2, 4, 6, 8, 10, 11, 13, 15, 17, 19, 21, 23, 26.
REFERENCES:	*Minister of Mines, B.C.*, Ann. Rept., 1916, p. 48; 1919, p. 83; 1929, p. 116; 1930, p. 119; *Geol. Surv., Canada*, Mem. 246, p. 74.

SPATSIZI RIVER 104H

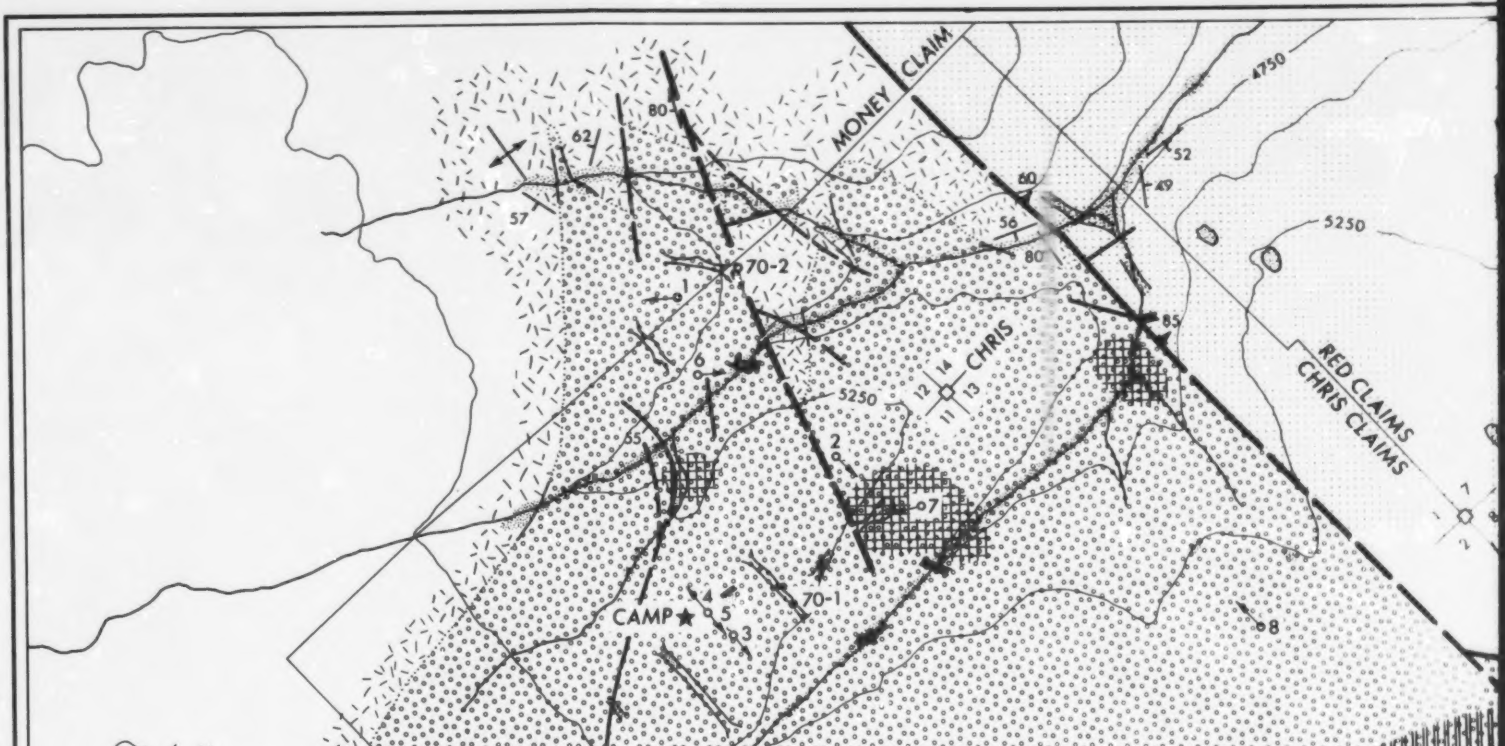
RAM (104H-11) (Fig. G, No. 18)

LOCATION:	Lat. 57° 38′ Long. 129° 59′ (104H/12W) LIARD M.D. Six miles south of the southern end of Eddontenajon Lake, between 4,500 and 5,500 feet elevation.
CLAIMS:	RAM 1 to 10.
OWNER:	ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.
METAL:	Molybdenum.
DESCRIPTION:	Basic volcanic rocks are intruded by subvolcanic intrusions from which felsic volcanic rocks were erupted. These rocks are overlain by clastic sedimentary rocks, possibly of Cretaceous age. Pyrite and molybdenite are associated with felsic volcanic rocks.
WORK DONE:	Surface geological mapping, 1 inch equals 1,000 feet covering all claims; geochemical survey, 28 silt samples covering Ram 6, 8-10 and 30 soil samples covering Ram 7-10.

WINDY, RED, CHRIS, SUS (104H-2, 4, 5, 6) (Fig. G, No. 17)

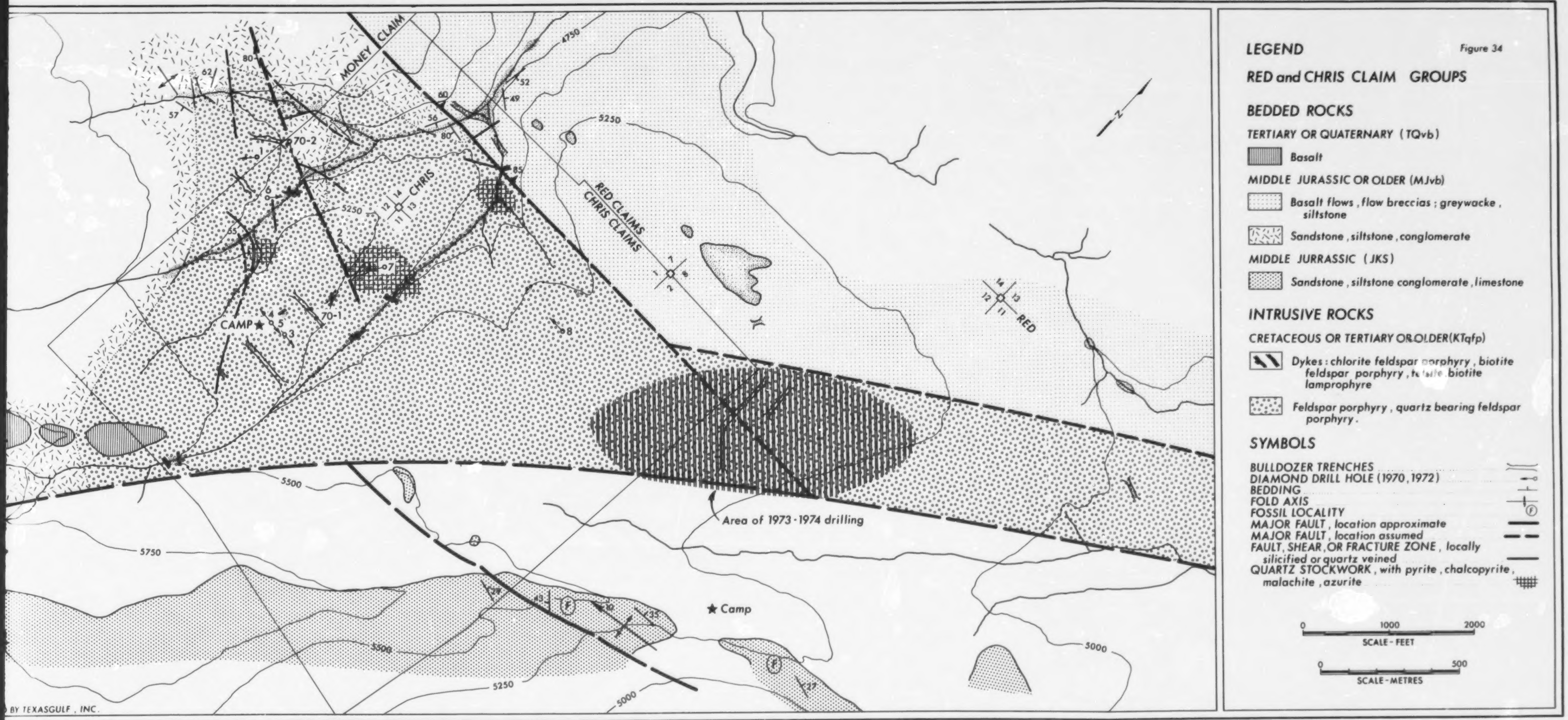
By A. Panteleyev

LOCATION:	Lat. 57° 42′ Long. 129° 48′ (104H/12W) LIARD M.D. Two miles northwest of Kluea Lake, between 4,000 and 5,000 feet elevation.
CLAIMS:	RED 4 to 34, SUS 51, 65 to 68, 79, 81, 83, SUS 58 Fraction, CHRIS 1 to 24, MONEY 1 to 30, 32, 34, 36, 38, 40 to 59, 61, 63, RAF 1 to 18, COUGAR 1 to 8 Fractions.



MONEY CLAIM
RED CLAIMS
CHRIS CLAIMS
CHRIS
CAMP
70-2
70-1
1
2
3
4
5
6
7
8
11
12
13
14
57
62
80
60
56
80
52
49
85
55
29
43
F
10
35
4750
5250
5250
5500
5750
5500
5250
5000

BASE MAP PROVIDED BY TEXASGULF , INC.

LEGEND
Figure 34
RED and CHRIS CLAIM GROUPS
BEDDED ROCKS
TERTIARY OR QUATERNARY (TQvb)
Basalt
MIDDLE JURASSIC OR OLDER (MJvb)
Basalt flows, flow breccias; greywacke, siltstone
Sandstone, siltstone, conglomerate
MIDDLE JURRASSIC (JKS)
Sandstone, siltstone conglomerate, limestone
INTRUSIVE ROCKS
CRETACEOUS OR TERTIARY OR OLDER (KTqfp)
Dykes: chlorite feldspar porphyry, biotite feldspar porphyry, felsite, biotite lamprophyre
Feldspar porphyry, quartz bearing feldspar porphyry.
SYMBOLS
BULLDOZER TRENCHES
DIAMOND DRILL HOLE (1970, 1972)
BEDDING
FOLD AXIS
FOSSIL LOCALITY
MAJOR FAULT, location approximate
MAJOR FAULT, location assumed
FAULT, SHEAR, OR FRACTURE ZONE, locally silicified or quartz veined
QUARTZ STOCKWORK, with pyrite, chalcopyrite, malachite, azurite
0
1000
2000
SCALE - FEET
0
500
SCALE - METRES
N
MONEY CLAIM
CHRIS
RED CLAIMS
CHRIS CLAIMS
RED
CAMP
Camp
70-2
70-1
Area of 1973 - 1974 drilling
4750
5250
5500
5750
5000
D BY TEXASGULF , INC.

(104H/12W)

OWNERS: Silver Standard Mines Limited, Great Plains Development Company of Canada, Ltd., Ecstall Mining Limited.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METAL: Copper.

DESCRIPTION:

Mineral showings consisting of base metal, gold, and silver mineralization in quartz and quartz-carbonate veins and widespread malachite in iron-stained zones have been known for some time to be associated with small intrusions in the Ealue-Kluea Lakes vicinity. Part of the area being presently explored was staked in 1956 as the Windy group. More recently iron-stained zones exposed in creeks incised in the dissected plateau region have been examined for potential porphyry copper-type mineralization. In 1969 Great Plains Development Company of Canada, Ltd. located the Chris and Money claims to cover one such large oxidized area in the dendritic headwaters of a northerly flowing creek. In 1970 Silver Standard Mines Limited staked contiguous claims of the Red and Sus groups to the north and northeast. Ecstall Mining Limited, under agreement with the owners, explored the Red and Sus groups in 1973 and expanded exploration in 1974 to include a portion of the Chris group.

GEOLOGY: No outcrops are known in the immediate vicinity of most recent drilling but bedrock is exposed in a number of bulldozer trenches. Streams to the west expose pyritic, iron-stained, bleached porphyritic and sedimentary rocks in the south and dark grey volcanic rocks interspersed with volcaniclastic and sedimentary rocks in the north. Similar volcanic rocks outcrop along the northern boundary of the Chris group. To the south and east are ridges and scarps of bedded fossiliferous sedimentary rocks that are typical of Mesozoic strata of the Bowser Basin. These are late Middle Jurassic rocks temporally equivalent (in part) to strata of the Upper Hazelton Group. The well-stratified rocks are in fault contact with feldspar porphyry intrusions and altered sedimentary and volcanic rocks that lie to the northwest.

Mineralized strata are of probable Lower Jurassic age or older and comprise two lithologically distinct map units separated, at least locally, by an east-west-trending fault. The fault dips steeply northward and trends parallel to the northern boundary of the Chris group. To the south of the fault are bedded rocks containing some chert and abundant feldspar porphyry clasts. Coarse siliceous sandstone, grit, and pebble conglomerate are the most common rock types. North of the east-west fault rocks are massive basaltic flows, brecciated flows or tuff breccias, and some epiclastic breccias and units of thinly bedded greywacke-siltstone.

Intrusive rocks are feldspar porphyries of undetermined age; they may be Cretaceous or older. The main rock type is fine to medium-grained, leucocratic feldspar porphyry with a crowded porphyry texture. Equant to slightly elongate plagioclase phenocrysts averaging 1 to 2 millimetres in size are randomly distributed throughout a light grey matrix now composed largely of chlorite, carbonate, clay minerals, sericite, and some fine-grained quartz. Quartz is generally less than 10 per cent and is present in the matrix as small grains. The main phase of feldspar porphyry is intruded by dykes of chloritic feldspar porphyry a few tens of feet wide and less commonly by smaller dykes of felsite and biotite lamprophyre. Younger feldspar porphyry is characterized by sparser, coarser grained plagioclase laths together with chlorite pseudomorphous after amphibole and fine-grained magnetite in a pink to light brown aphanitic matrix.

Feldspar porphyry has intruded sedimentary rocks mainly south of the east-west fault. Chloritic feldspar porphyry dykes intrude older feldspar porphyries and sedimentary and volcanic rocks. Both sedimentary and volcanic rocks are pyritized near the feldspar porphyry intrusions but siliceous sedimentary rocks are more intensely mineralized and more strongly iron stained than volcanic rocks north of the fault. The exact shape of feldspar porphyry intrusions is not known. On the basis of limited outcrop data from the faulted western margin of the intrusion, the feldspar porphyry may be emplaced as an irregular high-level plug or a series of northeasterly trending (tabular ?) bodies possibly centred on a small plug.

ALTERATION AND MINERALIZATION: Carbonatization, a subfacies of propylitic alteration, is the dominant alteration type in pyritic zones within and adjacent to the feldspar porphyry intrusions. Basic volcanic rocks north of the east-west fault are pervasively chloritized, epidotized, veined with orange-weathering carbonate, and locally mineralized with coarse crystalline pyrite. Further from feldspar porphyry they are of lower metamorphic grade and contain zeolites. Younger feldspar porphyry dykes contain chlorite totally replacing amphibole as well as calcite, epidote, clinozoisite, and magnetite.

South of the fault in the main mass of feldspar porphyry and adjacent siliceous sedimentary rocks, outcrops are iron stained with yellow, brown, and orange limonites. Rocks are bleached light grey with chalky white feldspars. This may account for earlier descriptions of the feldspar porphyry intrusions as 'felsite' or 'felsite porphyry.' Much of the bleaching near surface is due to supergene argillic alteration and leaching by acidic solutions generated by oxidation of pyrite. Supergene alteration is shallow as the groundwater table is close to surface and strong oxidation takes place to depths generally less than 10 metres. Leaching at depth by acidic solutions is also slight as rocks contain abundant carbonate minerals that neutralize acidic solutions. Possibilities of supergene copper enrichment are therefore slight and the minor secondary copper sulphides observed are present as a superficial tarnish on pyrite or chalcopyrite.

Hypogene alteration characterized by carbonate, chlorite, clay (montmorillonite ?), and saussuritized plagioclase in which relict twinning is evident, results in some bleaching of feldspar porphyry. Along fractures bleaching is more pronounced and where fractures are abundant, bleaching is pervasive and the rock is a light grey to buff colour. In these zones veinlets and disseminations of fine-grained ankeritic carbonate or siderite are common, plagioclase is strongly saussuritized so that no twinning is evident, and fine-grained quartz, chlorite, and clay are present in the matrix. In the most intensely altered zones original textures are largely destroyed by an intergrowth of pervasive crystalline siderite and fine-grained quartz, chlorite, albite, some sericite and kaolinite, and minute grains of hematite and magnetite. Quartz veinlets are abundant locally. The presence of hematite and siderite impart a buff to pink appearance to hand specimens that may be mistaken for K-feldspar flooding.

Pyrite and rare grains of chalcopyrite are associated with all altered rocks. Average pyrite content of 1 to 2 per cent can be seen over large outcrop areas and locally up to 5 per cent pyrite is present. Traces of malachite and azurite are seen in oxidized zones and a few grains of sphalerite and galena were noted in carbonate veinlets near the western intrusive contact. Most significant mineralization is pyrite, chalcopyrite, and some bornite in quartz stockworks. Sulphide minerals are found in quartz veinlets, along quartz-bearing and 'dry' fracture selvages, and as disseminated grains. One such chalcopyrite-bearing quartz stockwork is exposed by stripping near drill hole 7 (Fig. 34). A continuation of this zone or separate possibly more extensive mineralized stockworks have been intersected in recent drill holes. Copper mineralization tends to be erratic with patches of good grade mineralization (1 per cent copper and greater) interspersed with low-grade or barren zones. Extensive drilling will be necessary to establish continuity of mineralized quartz stockworks and to determine whether average grades are economically significant.

WORK DONE: Linecutting, 22 miles of grid; surface geological mapping, 1 inch equals 400 feet covering Chris 6-16, Red 7, 8, 29, Sus 79, 81, and Cougar 1, 4-6 Fractions; IP survey, 20 line-miles, 400-foot grid spacing and magnetometer survey, 22 line-miles, 400-foot grid spacing covering Raf 3, 4, Sus 79, 81, 83, Red 7-12, 18-28, Chris 1-7, 13, and Cougar 2, 6 Fractions; radem survey, 7.25 line-miles, 400-foot grid spacing covering Red 8-12, 23, 25-28, Chris 2, 4, 6, and Cougar 2 Fraction; geochemical soil surveys, 66 samples, 2 line-miles, 400-foot grid spacing covering Raf 4, Red 22, 24, Sus 81, 83 and 49 samples, 1 line-mile, 200-foot grid spacing covering Red 10 and 25; surface diamond drilling, 16 holes totalling 7,432 feet on Red 10, 25, 27 and Chris 2; percussion drilling, 10 holes totalling 2,560 feet on Red 10, 25 and Chris 2; claims, topography, and surface workings surveyed.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1956, p. 14; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 535-537; 1973, p. 509; Assessment Report 5297.

CRY LAKE 104I

TUC **(Fig. G, No. 19)**

LOCATION: Lat. 58° 10' Long. 128° 13' (104I/1E)
LIARD M.D. Nine miles south of Hottah Lake, 1 mile west of Tucho River.

CLAIMS: TUC 1 to 8.

OWNER: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

DESCRIPTION: The claims are underlain by schist and shale.

WORK DONE: Ground magnetometer survey, 1.2 line-miles, 100 by 400-foot grid spacing covering Tuc 3 and 4; surface diamond drilling, one hole totalling 200 feet on Tuc 3.

JEFF **(104I-61)** **(Fig. G, No. 20)** By A. Panteleyev

LOCATION: Lat. 58° 12' Long. 128° 22' (104I/1W)
LIARD M.D. The property is centred approximately 13 miles southeast of the south end of Rainbow Lake and about 65 miles east of Dease Lake, at approximately 5,000 feet elevation.

(104I/1W)

CLAIMS: JEFF 1 to 138, JENN 1 to 9, JANE 1 to 12, 15 to 33, RYAN 1 to 6, KRIS 1 to 26, PY 1 to 65, LIN 1 to 40, JET 1 to 3, BRUIN 1 and 2, WES 1 to 88.
OWNER: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.
METALS: Copper, zinc.
DESCRIPTION:

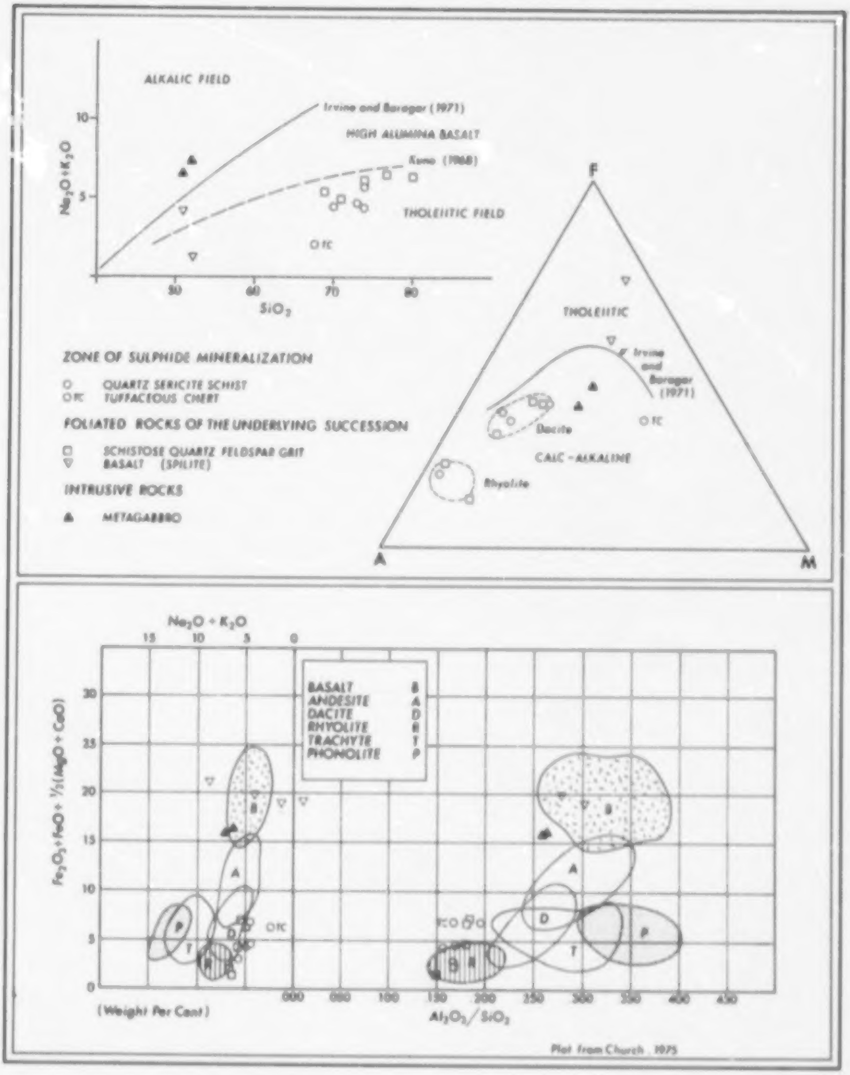
Pyrite-chalcopyrite-sphalerite-bornite mineralization in quartz-sericite schists has been discovered within a succession of siliceous sedimentary and volcaniclastic rocks on the Jeff and SMRB claim groups. The discovery has considerable importance to explorationists since it suggests that massive copper-zinc mineralization is present in rocks of the Hinterland Belt (eastern portion of the Intermontaine Belt) of the Columbia Orogen in addition to rocks of the Insular and Coast Crystalline Belts of the Pacific Orogen.

Age and correlation of host rocks are uncertain. They are shown in a recent Geological Survey of Canada 1:1,000,000 compilation map (Iskut River, Open File 214, 1974) to be part of a 'Carboniferous and Permian' assemblage. The rocks may be older and the possibility that they are Triassic cannot be discounted. On the basis of their acidic compositions, volcanic rocks are regarded by some to be equivalent to rocks of the Asitka Group of Pennsylvannian or Permian age. The rocks form an east-southeast-trending belt about 12 miles wide at the southeast extension of the Atlin terrane. To the north and east the Paleozoic (?) units are intruded by Cretaceous granitic intrusions of the Cassiar batholith. To the south the Paleozoic (?) rocks are in fault contact with Mesozoic strata along a zone of thrust faulting that may be a southeast extension of the King Salmon thrust fault described by Souther (1971).

Mineralization in the form of dispersed sulphides and massive sulphide lenses is concordant and grossly stratabound. It is contained in a sequence of fine-grained siliceous schist, quartz-sericite schist, quartz-chlorite-sericite schist interspersed with quartz-dolomite and dolomite lenses conformable with quartz eye (augen) schists. Mineralization is localized in sedimentary and epiclastic volcanic rocks near the top of a volcaniclastic pile close to the stratigraphic boundary with sedimentary units containing conglomerate and a thick succession of siltstone, shale, sandstone, and limestone.

The volcaniclastic rocks to the south of the mineralized zone are composed of feldspar and quartz feldspar-bearing tuffs or epiclastic grits with less abundant units of banded cherty tuff and chert and thick units of massive basalt flows and basic pyroclastic rocks. Trondhjemite intrusions of unknown dimensions intrude along the southern limit of mapping about 1.7 miles (3 kilometres) south of the mineralized zone.

Chemical composition of volcanic rocks is illustrated on Figure 35. Quartz feldspar and feldspar-bearing rocks fall in the field of rhyolite, rhyodacite, and dacite. Their silica content ranges from 76.4 to 79.9 per cent. Two specimens representative of the massive basic volcanic map units are basalt in composition. Hornblende-rich rocks believed to be intrusions emplaced along part of the volcaniclastic-sedimentary transition zone are tentatively called gabbro. All rocks except gabbro, which may be considerably younger, are subalkaline soda-rich varieties. Quartz-bearing rocks can be described as soda rhyolite or quartz keratophyre; basalt is spilitic and consistently lies in the tholeiitic field in various chemical plots. Comparison of mean values of 10 rocks representing quartz-



Plot from Church, 1975

Figure 35. Chemical composition of schistose epiclastic and volcanic rocks, Jeff and SMRB claims, Kutcho Creek area.

CHEMICAL COMPOSITION OF SOME QUARTZ – FELDSPAR ROCKS

(1 to 6 taken from Paul Gilmour, 1971, *Econ. Geol.*,
Vol. 66, p. 1241)

	1	2	3	4	5	6	7
SiO_2	75.31	75.00	71.28	75.70	75.10	75.04	72.67
TiO_3	0.23	0.23	0.20	0.16	0.22	0.10	0.38
Al_2O_3	12.56	12.32	14.93	11.02	12.84	13.39	12.36
Fe_2O_3	0.91	1.65	0.37	0.46	0.70	1.61	1.16
FeO	2.10	2.39	1.52	3.05	1.36	0.37	1.64
MnO	0.04	0.10	0.02	0.00	0.04	0.05	0.07
MgO	1.30	0.93	0.64	0.70	0.30	0.18	1.69
CaO	0.54	1.29	2.30	1.56	0.32	0.40	1.44
Na_2O	4.25	3.20	4.57	3.66	5.12	6.36	3.97
K_2O	1.12	1.74	2.90	1.46	2.39	0.83	1.05
H_2O	1.59	0.43	0.43	0.59	1.22	1.31	1.29
CO_2	0.12	1.47	0.95	0.48	0.03	0.10	1.50
P_2O_5	0.07	0.06	0.08	0.00	0.04	0.08	0.22
BaO	——	——	——	——	0.05	0.00	——
Rest	——	2.89	0.02	——	0.09	——	0.34
TOTALS	100.14	103.70	100.21	98.84	99.82	99.82	99.78

1 – Average of two porphyritic rhyolites, West Shasta, California, Kinkel, *et al.*, 1956.

2 – Average of six quartz porphyries, Jerome district, Airzona, Anderson and Creasy, 1958.

3 – Average of two gneisses, Manitouwadge, Ontario, Pye, 1957.

4 – Average of five quartz-eye gneisses, Chisel Lake, Manitoba, Williams, 1966.

5 – Quartz keratophyre, Great King Island, New Zealand, Bartrum, 1936.

6 – Quartz keratophyre, eastern Oregon, Gilluly, 1935.

7 – Average of ten quartz feldspar porphyries and quartz-sericite schists, Kutcho Creek deposit, British Columbia, P. Ralph, analyst, British Columbia Department of Mines and Petroleum Resources.

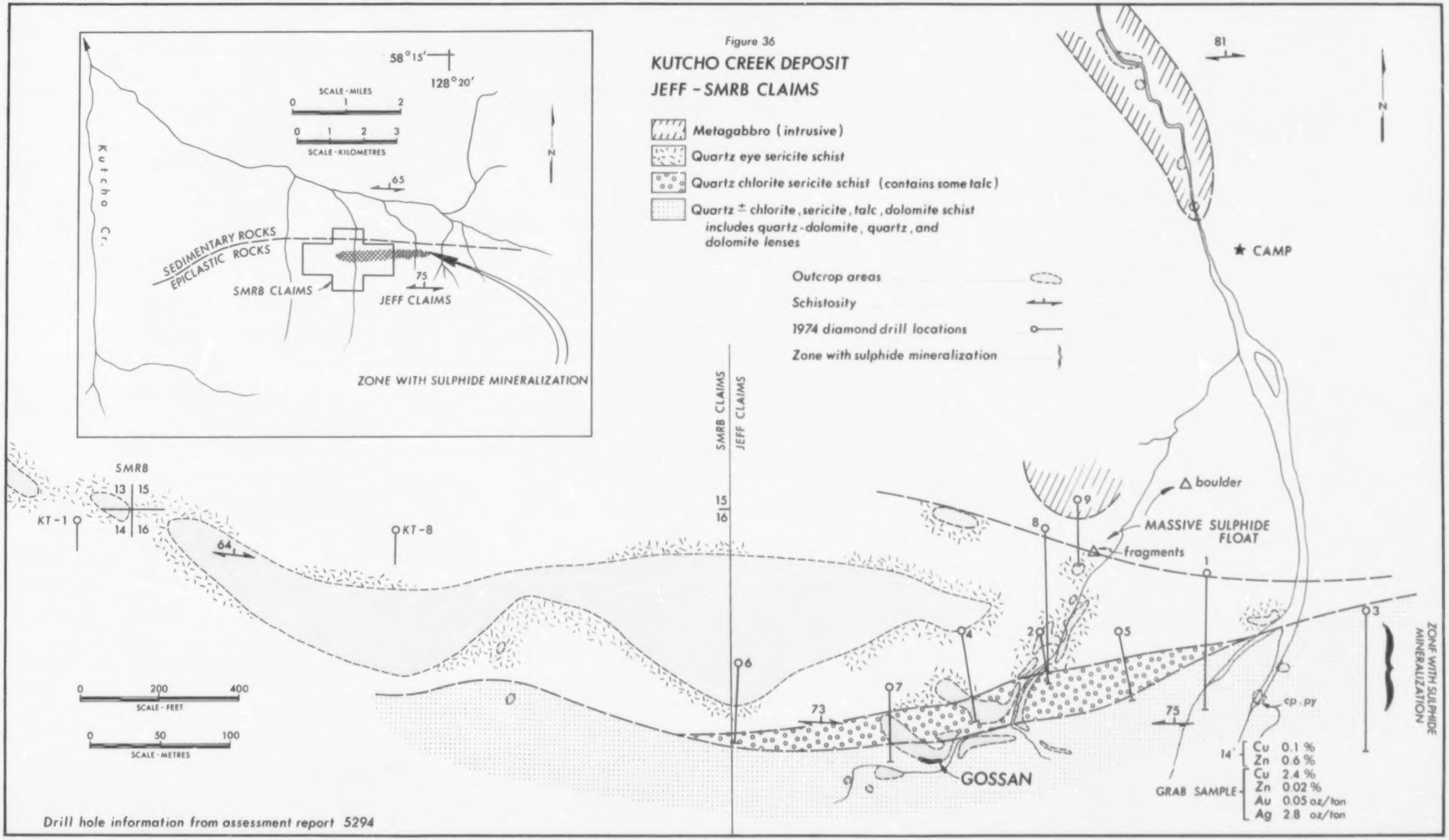


Figure 36

KUTCHO CREEK DEPOSIT
JEFF – SMRB CLAIMS

Metagabbro (intrusive)
Quartz eye sericite schist
Quartz chlorite sericite schist (contains some talc)
Quartz ± chlorite, sericite, talc, dolomite schist includes quartz-dolomite, quartz, and dolomite lenses
Outcrop areas
Schistosity
1974 diamond drill locations
Zone with sulphide mineralization
58° 15′
128° 20′
SCALE - MILES
0 1 2
0 1 2 3
SCALE - KILOMETRES
N
Kutcho Cr.
65
SEDIMENTARY ROCKS
EPICLASTIC ROCKS
75
SMRB CLAIMS
JEFF CLAIMS
ZONE WITH SULPHIDE MINERALIZATION
81
N
CAMP
SMRB CLAIMS
JEFF CLAIMS
SMRB
13 15
14 16
KT-1
KT-8
64
15
16
boulder
MASSIVE SULPHIDE FLOAT
fragments
9
8
1
2
3
4
5
6
7
73
75
cp. py
ZONE WITH SULPHIDE MINERALIZATION
14′
Cu 0.1 %
Zn 0.6 %
GRAB SAMPLE
Cu 2.4 %
Zn 0.02 %
Au 0.05 oz/ton
Ag 2.8 oz/ton
GOSSAN
0 200 400
SCALE - FEET
0 50 100
SCALE - METRES

Drill hole information from assessment report 5294

bearing members of the volcaniclastic succession with quartz-bearing volcanic rocks from other massive sulphide districts is shown in the following table. High values of MgO and CO_2 in rocks from the Kutcho Creek area are due to abundance of dolomite in rocks from the mineralized zone. Slight depletion of alkalis is also evident in these rocks.

All rocks are foliated to some degree. Schists constitute map units a few tens to hundreds of feet wide in volcanic rocks. Sedimentary rocks in the north are phyllitic and slaty. Schistosity trends east-west and dips northward. In a few places where bedding-cleavage relationships were observed, schistosity is parallel or is slightly flatter than bedding. Beds trend east-west and dip steeply northward. Thickness of the volcaniclastic pile is at least 8,000 feet (2,400 metres) but may be considerably greater as the base of the volcaniclastic succession was not seen. To date no structural interpretations have been made. Repetition of the bedded succesion in large recumbent isoclinal folds and possibly by thrusting is suspected. Westerly plunging structures are indicated by minor folds. Metamorphism is greenschist facies with widespread chlorite, calcite, epidote, and albite. Zoisite is a metamorphic mineral in quartz eye (augen) schists and actinolite and epidote are main alteration minerals in basic volcanic rocks. Dolomite, calcite, quartz, and possibly talc are present in the mineralized zone.

The presence of an extensive zone of mineralization along strike is indicated by iron-stained schists, some with limonite-filled crystal cavities (indigenous limonites) and two small outcrops of cupriferous pyritic quartz-sericite schist in creek beds about 4,000 feet (1,200 metres) apart. On the SMRB claims one outcrop 14 feet wide assayed: copper, 0.22 per cent; zinc, 0.05 per cent; gold, trace; and silver, trace. On the Jeff claims a similar partially leached outcrop assayed: copper, 0.1 per cent and zinc, 0.6 per cent. A small grab sample of well-mineralized rock from this outcrop assayed: copper, 2.4 per cent; zinc, 0.02 per cent; gold, 0.05 ounce per ton; and silver, 2.8 ounces per ton. The presence of massive sulphide mineralization is indicated by float fragments and one large boulder assaying: copper, 13.7 per cent, zinc, 4.7 per cent; lead, 0.25 per cent; gold, 0.035 ounce per ton; and silver, 3.4 ounces per ton (GEM, 1973, pp. 510, 511). A cellular boxwork gossan derived from a lens of massive sulphide mineralization about 30 feet long and up to 1.5 feet wide was observed. Diamond-drill holes intersected some pyritic massive sulphides but most sulphide minerals are dispersed as fine-grained disseminations and fracture fillings in quartz-sericite schist. A number of sulphide-bearing zones appear to be present, mainly in the footwall of a quartz eye (augen) schist. A sketch map showing outcrop distribution and drill-hole locations in relation to quartz eye (augen) schist is shown on Figure 36.

WORK DONE: Claims (in part) and topography surveyed (Jeff and Jenn claims); surface geological mapping, 1 inch equals 1,000 feet covering Jeff, Jenn, Py, and Kris claims; ground magnetometer survey, 15.2 line-miles, 100 by 400-foot grid spacing covering Jeff 1-6, 40 and Jenn 1-4, 5.6 line-miles on Kris group of claims, and 2.4 line-miles on Jane 1, 3, 20-24; surface diamond drilling, 11 holes totalling 4,120 feet on Jeff 4, 6, 40 and Jenn 1, three holes totalling 729 feet on Kris 4, 23 and Lin 1, and two holes totalling 717 feet on Jane 3, 22.

REFERENCES: Church, B. N., 1975, Quantitative Classification and Chemical Comparison of Common Volcanic Rocks, *G.S.A.*, Bull., Vol. 86, No. 2, pp. 257-263; Irvine, T. N. and Baragar, W.R.A., 1971, a Guide to the

Chemical Classification of the Common Volcanic Rocks, *Cdn. Jour. Earth Sci.*, Vol. 8, pp. 523-548; Souther, J. G., 1971, Geology and Mineral Deposits of Tulsequah Map-area, British Columbia, *Geol. Surv., Canada*, Mem. 362, p. 84; Gabrielse, H., 1962, Cry Lake Map, 104I, *Geol. Surv., Canada*, Map 29-1962; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 510, 511; Assessment Reports 5138, 5147, 5253, 5294.

SMRB (104I-60) (Fig. G, No. 21)

LOCATION: Lat. 58° 12′ Long. 128° 23′ (104I/1W)
LIARD M.D. Thirteen miles south of Rainbow Lakes on an eastern tributary to Kutcho Creek, at approximately 4,400 feet elevation.

CLAIMS: SMRB 1 to 16.

OWNER: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver V6B 1L8.

METALS: Copper, zinc.

DESCRIPTION: Pyritic quartz-sericite schists containing chalcopyrite and sphalerite are part of a more extensive pyritic zone that can be followed for considerable distances along strike. For a more extensive discussion refer to description of the Jeff claims. The Jeff claims completely enclose the SMRB claims.

WORK DONE: Claims surveyed; surface diamond drilling, four holes totalling 2,115 feet on SMRB 5, 13, 14, and 15.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 510; Assessment Report 5120.

BCR, SS (104I-68) (Fig. G, No. 22)

LOCATION: Lat. 58° 07′ Long. 129° 50′ (104I/4W)
LIARD M.D. Five miles north of Stikine River crossing, straddling the new British Columbia Railway line, at approximately 3,400 feet elevation.

CLAIMS: BCR 1 to 38, SS 1 to 34.

OWNER: Stikine Services Ltd.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, 555 Burrard Street, Vancouver.

METALS: Copper, zinc, lead, molybdenum.

DESCRIPTION: The claims are situated along the contact of the Hotailuh batholith which intrudes Upper Triassic volcanic rocks. Chalcopyrite with minor sphalerite, galena, and molybdenite are developed in northerly trending sets of fractures. Locally fractures have argillic and quartz-sericite alteration envelopes.

WORK DONE: Surface geological mapping, 1 inch equals one-quarter mile covering SS 29-34 and BCR 1-38; percussion drilling, 15 holes totalling 1,430 feet on BCR 3, 4, 7, 8, 9, 10, 18, 20, 25, 28, 32, 34 and SS 7, 30, 34.

JOY (EAGLE) **(104I-8)** **(Fig. G, No. 23)**

LOCATION: Lat. 58° 30′ Long. 129° 10′ (104I/6E, 11E)
LIARD M.D. Thirty-three miles east of Dease Lake, 5 miles southeast of Eaglehead Lake, at approximately 4,850 feet elevation.

CLAIMS: EAGLE 1 to 79, 81, 83, 85, 87, 89 to 156, 158, 160, 162, 164.

OWNER: Nuspar Resources Ltd. (formerly Spartan Explorations Ltd.).

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, (molybdenum).

DESCRIPTION: Fracture-controlled chalcopyrite, bornite, molybdenite, and widespread pyrite are developed along the sheared and faulted contact of a quartz diorite batholith. Evidence of mineralization has been found over a distance of several miles.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 5 line-miles, 800-foot grid spacing; geochemical soil and silt survey, 200 samples, 5 line-miles, 800-foot grid spacing covering Eagle 126-129 and 136-139.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1965, p. 16; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 511.

DEASE LAKE 104J

KID, GRIZZLY **(104J-4, 16)** **(Fig. G, No. 24)**

LOCATION: Lat. 58° 14′ Long. 131° 53′ (104J/4W)
ATLIN M.D. On the west side of Sheslay River, 3 miles above its junction with Hackett River, at approximately 3,800 feet elevation.

CLAIMS: KID 1, GRIZZLY 1 to 20, RED 41 to 44, 47 to 50, 53, 55, 57, 59, 61, 101, 103, 105, 107, 109.

OWNERS: E. Asp, G. Davies, and Cobre Exploration Limited.

OPERATORS: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver and BRASCAN RESOURCES LIMITED, 502, 1155 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Upper Triassic volcanic rocks are intruded by diorite-quartz diorite and minor syenite intrusions of the Late Triassic Kaketsa stock. Chalcopyrite and pyrite are disseminated in intrusive rocks and localized in shear zones in adjacent volcanic rocks.

WORK DONE: Time-domain IP survey, 4 line-miles, 400-foot grid spacing covering Grizzly 5-10, 15, 17, 19; surface diamond drilling, three holes totalling 1,902 feet on Grizzly 6, 8, and 10.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 547; Assessment Reports 5040, 5231.

TULSEQUAH 104K

TUN (104K-63) (Fig. G, No. 25)

LOCATION: Lat. 58° 26' Long. 132° 52' (104K/7W)
ATLIN M.D. Four and one-half miles west of Tunjony Lake, at approximately 4,000 feet elevation.

CLAIMS: TUN 1 to 8.

OWNERS: HUDSON BAY EXPLORATION AND DEVELOPMENT COMPANY LIMITED, 1695, 555 Burrard Street, Vancouver and ANGLO AMERICAN CORPORATION OF CANADA EXPLORATION LIMITED, Box 28, Toronto-Dominion Centre, Toronto, Ont.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain mainly by quartz monzonite, which intrudes Upper Triassic Stuhini volcanic rocks. The quartz monzonite is in turn intruded by a small plug of quartz feldspar porphyry and by andesitic dykes. On Tun 4 a small zone of feldspathic pegmatite is cut by shear zones striking 030 degrees to 050 degrees and is locally intensely fractured. Molybdenite and lesser bornite and chalcopyrite are disseminated in the pegmatite, and bornite and chalcopyrite are concentrated with quartz in the core. Chalcopyrite and/or malachite occur with quartz in shear zones and fractured zones near the pegmatite.

WORK DONE: Linecutting, 4.55 miles of grid; surface geological mapping, 1 inch equals 200 feet and 1 inch equals 20 feet; magnetometer survey, 4.55 line-miles, 50 by 400-foot grid spacing covering Tun 1-7.

REFERENCE: Assessment Report 5154.

SKAGWAY 104M

LAVERDIERE (104M-22) (Fig. G, No. 27)

LOCATION: Lat. 59° 13' Long. 134° 07' (104M/1E)
ATLIN M.D. In the valley of Hoboe Creek, 2 miles south of Willison Bay at the south of the southwest end of Atlin Lake, between 2,200 and 6,000 feet elevation.

CLAIMS: BUTTE (Lot 304), GREAT FALLS (Lot 306), HELENA (Lot 305) Crown-granted claims plus BEAR 1, BROTHER 2, CUAG 1, HJ 1, TUNNEL Fraction, LOON 1 to 20, 25 to 44, 120, 122, 141 to 162 located claims.

OWNER: Hobo Creek Copper Mines Ltd.

OPERATOR: RIO PLATA SILVER MINES LTD., 400, 475 Howe Street, Vancouver.

METALS: Copper, molybdenum, iron.

DESCRIPTION: Metamorphosed pre-Permian sedimentary rocks are intruded by plutonic rocks of the Coast intrusions. Mineralization is present as small but high-grade pods of chalcopyrite-magnetite in contact metasomatic deposits and as widespread copper-molybdenum mineralization along and to the west of the main intrusive contact.

WORK DONE: 1973 – airborne magnetometer survey, 110 line-miles covering all claims; 1974 – surface diamond drilling, five holes totalling 187 feet on Loon 71, 79, 80, 100 (core logged).

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1904, p. 79; 1918, p. 93; 1964, p. 8; *Geol. Surv., Canada,* Mem. 37, p. 117; Assessment Report 4995.

MOLLY (104M-29) (Fig. G, No. 26)

LOCATION: Lat. 59° 14' Long. 134° 09' (104M/1E)
ATLIN M.D. One mile south of Willison Bay, at the southwest end of Atlin Lake, between 3,400 and 3,800 feet elevation.

CLAIMS: Forty-eight MOLLY and six FAYE.

OWNER: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Molybdenum, (copper).

DESCRIPTION: Metavolcanic rocks of Paleozoic age are intruded by a number of intrusive phases of the Coast Plutonic Complex which are mineralized with molybdenite, pyrite, and chalcopyrite. Mineralization occurs as disseminations and in quartz veins, fractures, and breccia zones.

WORK DONE: Surface diamond drilling, four holes totalling 2,114 feet on Molly 11, 12, and 30.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 555; Assessment Report 5263.

ATLIN 104N

ADANAC (ADERA) (104N-52) (Fig. G, No. 28)

LOCATION: Lat. 59° 42' Long. 133° 24' (104N/11W)
ATLIN M.D. Fifteen miles northeast of Atlin, at the headwaters of Ruby Creek, at approximately 4,700 feet elevation.

CLAIMS: ADERA, KEY, MATT, CM, HOBO, CLAIRE, ZAP, RU, THOR, SNAFU, HL, BOY, PACIFIC, totalling approximately 190.

OWNER: Adanac Mining and Exploration Ltd.

OPERATOR: CLIMAX MOLYBDENUM CORPORATION OF BRITISH COLUMBIA LIMITED, Box 59, Atlin.

METAL: Molybdenum.

DESCRIPTION: A large molybdenite deposit is associated with multiple alaskite intrusions of the Mount Leonard Boss.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Hobo 3-8, 13, 14; surface diamond drilling, seven holes totalling 4,900 feet on Hobo 7, 8, 20 and Adera 1, 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 515; Assessment Report 5071.

HOLLIDAY-RANSON, SANDY (104O-1, 2, 12) (Fig. G, No. 32)

LOCATION: Lat. 60° 00′ Long. 130° 33′ (104O/15E)
LIARD M.D. At the British Columbia-Yukon boundary, 8 miles north-northwest of the east end of Tootsee Lake, at the head of Freer Creek, at approximately 6,500 feet elevation.

CLAIMS: SANDY 25 to 44 (SANDY 1, 9 to 22, and 24 claims are in the Yukon Territory).

OWNER: Yucol Mines Ltd.

OPERATORS: YUCOL MINES LTD. and CONE MT. MINES LTD., 8167 Main Street, Vancouver.

METALS: Lead, zinc, silver.

DESCRIPTION: Veins with lead, zinc, and silver mineralization are found in granodiorite and quartz monzonite of the Cassiar batholith.

WORK DONE: Prospecting covering Sandy 25-29, 31, 33, 35-44.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1948, p. 60; 1949, p. 69; 1966, p. 17; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 516; Assessment Report 5095.

PCP (104O-25) (Fig. G, No. 29)

LOCATION: Lat. 59° 56′ Long. 130° 30′ (104O/15E, 16W)
LIARD M.D. At the headwaters of the Tootsee River, 3 miles northwest of the east end of Tootsee Lake, at approximately 4,000 feet elevation.

CLAIMS: PCP 2, 6, 17 to 20, 37 to 40. (The claims cover part of the former AMY claims.)

OWNER: ANGLO-BOMARC MINES LTD., 301, 540 Burrard Street, Vancouver.

METALS: Zinc, lead, silver.

DESCRIPTION: Fracture-controlled zinc, lead, and silver mineralization is localized in limestone in a sequence of interbedded argillite, phyllite, limestone, and schist.

WORK DONE: Trenching, 1,100 feet on PCP 2, 6, 18, and 37.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1965, p. 10; Assessment Reports 734, 3566.

SILVERTIP (104O-3) (Fig. G, No. 30)

LOCATION: Lat. 59° 55′ Long. 130° 21′ (104O/16W)
Twelve miles south of Mile 701 on the Alaska Highway, 3.5 miles east-northeast of the east end of Tootsee Lake.

CLAIMS: TAM 1 to 20.

OWNER: A. Harmand.

OPERATOR: BELMORAL MINES LTD., 107, 325 Howe Street, Vancouver.

METALS: Silver, lead, zinc.

(104O/16W)

DESCRIPTION: McDame Group limestone on the west is in fault contact with Sylvester Group phyllite on the east. Mineralized zones in the limestone have been intensely oxidized to depths in excess of 200 feet. The resulting gossan zones consist of oxides and carbonates enclosing rounded fragments of galena.

WORK DONE: 1973 – surface geological mapping, 1 inch equals 200 feet covering TAM 7, 16, 18, and 20.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, pp. 24-33; Assessment Report 4973.

LUCK (Fig. G, No. 31)

LOCATION: Lat. 60° 00′ Long. 130° 27′ (104O/16W)
LIARD M.D. At the British Columbia-Yukon Territory boundary, 7 miles north of the east end of Tootsee Lake, at approximately 4,500 feet elevation.

CLAIMS: LUCK 25 to 28, CONE 1 to 6. (The LUCK 7 to 12, 15, 17, 19, and 21 claims are in the Yukon Territory.)

OWNER: CONE MT. MINES LTD., 8167 Main Street, Vancouver.

DESCRIPTION: The claims are underlain by medium to coarse-grained quartz monzonite of the Cassiar batholith.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Cone 1-6 and Luck 25-28.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 517; Assessment Report 5095.

McDAME 104P

VOLLAUG (HURRICANE, RED HILL) (104P-19) (Fig. G, No. 33)

LOCATION: Lat. 59° 12′ Long. 129° 38′ (104P/4E)
LIARD M.D. Two miles south of McDame Lake, on Table Mountain, at approximately 5,000 feet elevation.

CLAIMS: HURRICANE 1 to 4, RED HILL 1 to 4, ADIT 1 and 2, EAST Fraction, and WEST Fraction Crown-granted claims plus RED HILL 5 and 6, JENNIE EXTENSION 1 to 4, and DON located claims.

OWNER: Table Mountain Mines Limited.

OPERATOR: ASAMERA OIL CORPORATION LTD., 1500, 355 Eighth Avenue SW., Calgary, Alta.

METALS: Gold, silver.

DESCRIPTION: A ribboned, graphitic quartz vein containing free gold, tetrahedrite, and pyrite is developed along a persistent east-west structure in rocks of the Sylvester Group.

(104P/5E)

WORK DONE: Surface geological mapping, 1 inch equals 700 feet covering all claims; surface diamond drilling, two holes totalling 374 feet on Hurricane 2 and underground diamond drilling, one hole totalling 231 feet on Hurricane 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 517, 518.

CORNUCOPIA (BENROY, HANNA GOLD) (104P-12) (Fig. G, No. 34)

LOCATION: Lat. 59° 16′ Long. 129° 40′ (104P/5E)
LIARD M.D. Six miles east of Cassiar, immediately northeast of the confluence of Quartzrock and Trout Creeks.

CLAIMS: COPCO 1 to 6, ROY 1 to 4, ATLAS 1 to 11, TOD 7 and 8, DOR 1, THRUSH.

OWNER: DORCHESTER RESOURCES LTD., 1100, 235 First Avenue, Kamloops.

METAL: Gold.

DESCRIPTION: A series of quartz veins striking east-west and dipping steeply north carries free gold, pyrite, tetrahedrite, and minor chalcopyrite. Veins average about 45 centimetres in width and occur in a number of parallel structures a few tens of metres apart. Mineralized quartz veins are enclosed in pyritic, orange-weathering ankeritic alteration zones 7 metres in width.

WORK DONE: Reopening of main adit, removal of ice, rehabilitation, sampling, etc.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1947, pp. 70-72; 1964, p. 10.

JOEM, TIBOR (104P-38, 58) (Fig. G, No. 35)

LOCATION: Lat. 59° 20′ Long. 129° 29′ (104P/6W)
LIARD M.D. Fifteen miles east-northeast of Cassiar, on Mount Haskin, between 3,900 and 5,000 feet elevation.

CLAIMS: JOEM, DAKO, PAC, TIBOR, DAVE, ANDY, SS, MOM, RAIN, MACK, BOB, TRI, A G MAMBA, totalling approximately 100.

OWNER: DELLA MINES LTD., Box 1107, Royal Centre, Vancouver V6E 3P3.

METALS: Copper, lead, zinc, molybdenum, (copper, bismuth).

DESCRIPTION: Silver, zinc, copper, and bismuth mineralization is developed in a pyrrhotitic skarn deposit developed along bedding contacts of limestone and siliceous argillite. Elsewhere on the property molybdenite is associated with an Eocene stock. Skarn mineralization is also probably related to these intrusions.

WORK DONE: Surface diamond drilling, four holes totalling 450 feet on Tibor 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 518, 519; Assessment Report 5121.

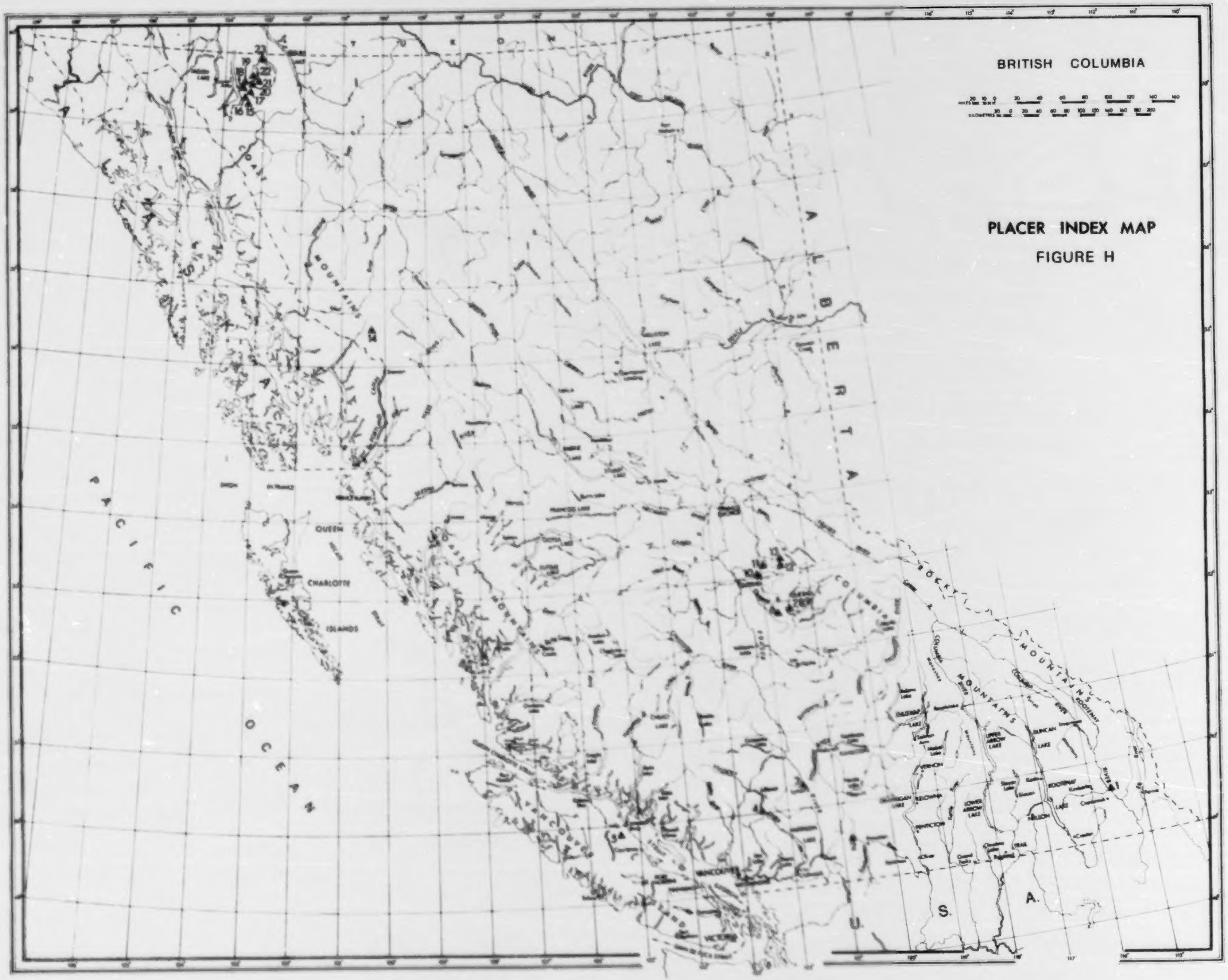
TATSHENSHINI RIVER 114P

ALU (114P-57) (Fig. G, No. 36)

LOCATION: Lat. 59° 08' Long. 137° 00' (114P/2W, 3E)
ATLIN M.D. Three miles northeast of the northern end of Tarr Inlet.
CLAIMS: ALU 1 to 28.
OWNER: THE SWISS ALUMINIUM MINING CO. OF CANADA LTD., 1112, 409 Granville Street, Vancouver.
METALS: Copper, molybdenum, tungsten, silver, gold.
DESCRIPTION: Widespread but erratic mineralization is found in quartz feldspar veinlets in crystalline limestones and lesser volcanic rocks along the contact of granitic intrusions.
WORK DONE: Surface geological mapping, 1:50,000 covering all claims.
REFERENCES: Assessment Report 5289.

SAC (114P-58) (Fig. G, No. 37)

LOCATION: Lat. 59° 19' Long. 137° 08' (114P/6E)
ATLIN M.D. Sixteen miles north of Tarr Inlet, at approximately 5,500 feet elevation.
CLAIMS: SAC 1 to 12.
OWNER: THE SWISS ALUMINIUM MINING CO. OF CANADA LTD., 1112, 409 Granville Street, Vancouver.
METAL: Copper.
DESCRIPTION: Malachite and azurite are associated with rhyolitic quartz porphyry intrusions in andesitic volcanic rocks.
WORK DONE: Surface geological mapping, 1:50,000 covering all claims.
REFERENCE: Assessment Report 5206.


BRITISH COLUMBIA
MILES
KILOMETRES
YUKON
ALASKA
COAST MOUNTAINS
ALBERTA
ROCKY MOUNTAINS
COLUMBIA MOUNTAINS
QUEEN CHARLOTTE ISLANDS
PACIFIC OCEAN
VANCOUVER
VICTORIA
COLUMBIA
FRASER
SHUSWAP LAKE
VERNON
KELOWNA
OKANAGAN LAKE
PENTICTON
UPPER ARROW LAKE
LOWER ARROW LAKE
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PLACER INDEX MAP

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PLACER

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GENERAL REVIEW OF PLACER MINING

The free market price of fine gold continued to rise during 1974. From the year low of $115 an ounce early in January, the price advanced to $178 an ounce at the end of February and then declined to an average of $150 to $158 an ounce by mid-year, a level that was maintained through October. In November, the price began to rise sharply, closing at year-end at $197.50 (U.S.) on the London gold market.

Interest in placer continued in 1974: the number of new leases issued was 401, compared to 547 issued in 1973. Despite higher prices, the recorded production of placer gold declined from 3,831 ounces valued at $311,524.00 in 1973 to 1,452 ounces valued at $232,512.10 in 1974.

REPORTS ON PLACER OPERATIONS

MAUS CREEK

MAUS MINERALS LTD. (Fig. H, No. 1) (82G/12E)

Lat. 49° 38′ Long. 115° 33′ Fort Steele M.D.

The company (409 Dieppe Blvd., Lethbridge, Alta.) holds P.M.L. Nos. 732, 733, 945, and 1126 on Maus Creek, 4 miles northeast of Fort Steele.

The bedrock drift on P.M.L. No. 733 was driven a further 12.5 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res,* GEM, 1973, p. 524.

TULAMEEN

N. & B. SALVAGE LTD. (Fig. H, No. 2) (92H/10W)

Lat. 49° 32.5′ Long. 120° 49′ Similkameen M.D.

The company (1912, 1177 West Hastings Street, Vancouver) holds P.M.L. No. 1364, situated 2.5 miles west of the village of Tulameen on the Tulameen River.

One hundred feet of trenching was carried out in 1974.

CAMPBELL RIVER

OYSTER RIVER PLACER MINING LTD. (Fig. H, No. 5) (92F/14W)

Lat. 49° 52′ Long. 125° 19′ Nanaimo M.D.

The company (60 Ninth Avenue, Campbell River) holds P.M.L. Nos. 64 and 66, situated on the Oyster River, 17 miles south of Campbell River.

Work done in 1974 included some drilling, 2 miles of road construction, and trenching and stripping.

FRASER RIVER

LYTTON PLACER (Fig. H, No. 3) (92I/4E)

Lat. 50° 14.5′ Long. 121° 36′ Kamloops M.D.

A. P. Fawley (1347 West King Edward Avenue, Vancouver) holds P.M.L. No. 714, situated on the west bank of the Fraser River, just north of the junction with the Thompson River.

Some pitting was done and a shaking sluice was set up for test purposes.

LILLOOET RIVER

HEMRICK MINES LTD. (Fig. H, No. 4) (92J/2E)

Lat. 50° 03' Long. 122° 32' New Westminster M.D.

The company (7507 Heather Street, Vancouver) holds the following placer leases, P.M.L. Nos. 780 to 787, 789, 831 to 836, 862 to 865, and 899 to 903, extending along the Lillooet River from 3 miles north of Billygoat Creek to 2 miles south of the creek.

Development work consisted of drilling and sampling for gold and platinum group metals.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 524.

CEDAR CREEK

GOLDEN HORN PLACER (Fig. H, No. 7) (93A/12E)

Lat. 52° 34' Long. 121° 30' Cariboo M.D.

Golden Horn Placer Ltd. (21 North Hills Centre, North Kamloops) holds P.M.L. Nos. 1789, 2324, 2973, and 2974 on the south side of Cedar Creek, 5 miles southeast of Likely and 1 mile west of Quesnel Lake.

Trenching and stripping were carried out on all leases.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 525.

LARSON PLACER (Fig. H, No. 8) (93A/11W)

Lat. 52° 34' Long. 121° 29.5' Cariboo M.D.

P.M.L. No. 7393, on Cedar Creek 1 mile west of Quesnel Lake, is owned by N. Larson (21 North Hills Centre, North Kamloops). Some trenching was carried out on the lease.

BIANCO PLACER (Fig. H, No. 9) (93A/11W)

Lat. 52° 34' Long. 121° 29' Cariboo M.D.

P.M.L. Nos. 7396 and 7397, situated on Cedar Creek 1.5 miles west of Quesnel Lake, are owned by Mary Bianco (1023 Schubert Drive, Kamloops) and Paul Bianco (21 North Hills Centre, North Kamloops) respectively.

Limited trenching was done on both leases.

GROGAN CREEK PLACER (Fig. H, No. 24) (93A/11W, 12E)

Lat. 52° 35' Long. 121° 30' Cariboo M.D.

P.M.L. Nos. 7417 and 7418, held by John M. McAndrew and Marie-Paule F. McAndrew (212, 14840 – 105th Avenue, Surrey), are situated approximately 12,000 feet southeast of the mouth of Grogan Creek and approximately 1,500 feet northeast of Cedar Creek.

Three overburden holes were drilled in the stream channel. The overburden varied from 21 to 46 feet.

REFERENCE: Assessment Report 5388.

LIGHTNING CREEK

HANNANDOR GOLD LTD. **(Fig. H, No. 10)** **(93G/1E)**

Lat. 53° 01′ Long. 122° 02′ Cariboo M.D.

The company (303, 10210 – 118th Street, Edmonton, Alta.) holds P.M.L. Nos. 5427, 5626, 5698, 5743, 5809, 6015, and 6019, which are situated on Lightning Creek near its junction with Mostique Creek.

Development work, consisting of pumping out pits in gravel and washing gravel, was confined to P.M.L. No. 5743.

VAN WINKLE PLACER **(Fig. H, No. 25)** **(93H/4E)**

Lat. 53° 01.4′ Long. 121° 41′ Cariboo M.D.

Zeilers Trigold Gulch Ltd. (Box 904, Vernon) holds P.M.L. No. 7226, which is situated on Lightning Creek just east of its confluence with Van Winkle Creek. Development work consisted of limited stripping.

DAVIS CREEK PLACER **(Fig. H, No. 26)** **(93H/4E)**

Lat. 53° 03.2′ Long. 121° 43.7′ Cariboo M.D.

Zeilers Trigold Gulch Ltd. (Box 904, Vernon) holds P.M.L. No. 7225, situated on Davis Creek, a tributary of Lightning Creek. Development work consisted of limited stripping.

GAVIN LAKE

GAVEX GOLD MINES LTD. **(Fig. H, No. 6)** **(93A/5E, 12E)**

Lat. 52° 29′ Long. 121° 41′ Cariboo M.D.

The company (Box 4386, Williams Lake) holds P.M.L. Nos. 7191, 7192, 7281, 7288, 7294, 7316, 7413, 7438, 7439, and 7448 to 7451. These are situated between 2 and 4 miles northeast of the east end of Gavin Lake.

Trenching, test pitting, and road building were carried out on most of the leases.

SUMMIT CREEK

PINUS CREEK PLACER **(Fig. H, No. 12)** **(93H/4E)**

Lat. 53° 08′ Long. 121° 31.5′ Cariboo M.D.

P.M.L. No. 7230, situated on Pinus Creek, three quarters of a mile south of its confluence with Shepherd Creek, was operated by Strategic Developments Ltd. (104, 1370 Clyde Avenue, West Vancouver).

Some 600 yards of stripping was done in addition to general prospecting.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 527.

SUMMIT CREEK PLACER (Fig. H, No. 27) (93H/4E)

Lat. 53° 09' Long. 121° 30.5' Cariboo M.D.

P.M.L. Nos. 6330, 6593, 6766, and 6892, owned by C.L.M. Giggey (Box 147, Wells), are situated on Summit Creek. Work consisted of exploration drilling on P.M.L. 6330.

EIGHT MILE LAKE PLACER (Fig. H, No. 13) (93H/4E)

Lat. 53° 09' Long. 121° 32' Cariboo M.D.

Dubarry Resources Ltd. (486 McGill Drive, Port Moody) holds P.M.L. Nos. 6780, 6783, 6938, and 6939 in the vicinity of Eight Mile Lake, 4 miles northeast of Wells.

Exploration and development work consisted of geological mapping, a seismic survey, and test pitting at the bottom of Eight Mile Lake, using a suction dredge.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 527, 528.

WILLOW RIVER

BEAVER PASS (LANGFORD) PLACER (Fig. H, No. 11) (93H/4W)

Lat. 53° 08.5' Long. 121° 56' Cariboo M.D.

David C. King (Box 904, Vernon) holds P.M.L. Nos. 7162 to 7166, 7184, and 7185 on Tregillus Creek at the junction of Aura Fine Creek.

Development work, carried out by Golden Ark Exploration Ltd., included the construction of a 5,000-foot spillway on P.M.L. Nos. 7184 and 7185.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 528.

SULPHURETS CREEK

SULPHURETS CREEK PLACER (Fig. H, No. 14) (104B/8W, 9W)

Lat. 56° 30' Long. 130° 21' Skeena M.D.

P.M.L. Nos. 103, 105, 110, and 111 on Sulphurets Creek at the junction of Mitchell Creek are held by C. L. Kilbury (Ketchikan, Alaska) and associates. During a three-month period, approximately 300 yards of gravel was sluiced. A Sauerman dragline with a ¼-yard bucket was utilized.

ATLIN AREA

By B. M. Dudas

Interest in placer mining persisted in the Atlin Mining Division and a large number of new leases changed hands.

Assessment work was recorded on placer leases on Birch Creek, Boulder Creek, Bull Creek, Dry Creek, Eureka Creek, Graham Creek, Lina Creek, Otter Creek, Pine Creek, Spruce Creek, Squaw Creek, and Wright Creek.

In addition, significant work was done on other leases as follows:

RUBY CREEK **(Fig. H, No. 22)** **(104N/11W)**

Lat. 59° 40.5° Long. 133° 20′ Atlin M.D.

P.M.L. No. 1321 on Ruby Creek is held by the S. R. Craft estate and leased to J. E. Wallis of Atlin. Approximately 1,000 cubic yards of gravel was sluiced with the aid of a 922 Caterpillar loader and backhoe over a four-month period. The steep gradient of the narrow valley necessitated the construction of a small series of settling ponds.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 530.

OTTER CREEK **(Fig. H, No. 20)** **(104N/11W)**

Lat. 59° 36.5′ Long. 133° 23.5′ Atlin M.D.

P.M.L. Nos. 1687, 1688, 1699, 1702 to 1706, and 1797 on Otter Creek are held by R. Day of Florida. On a contract basis, T. O. Connolly of Atlin worked the leases for two and one-half months. Approximately 18,000 cubic yards of gravel was sluiced with the aid of a D-7 Caterpillar tractor on previously hydraulicked ground. Raw tailings from the sluicing was disposed of in two small settling ponds. A one-half-mile magnetometer survey was completed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 530; Assessment Report 5224.

WRIGHT CREEK **(Fig. H, No. 21)** **(104N/11W)**

Lat. 59° 37′ Long. 133° 21′ Atlin M.D.

P.M.L. Nos. 1684 to 1686, 1698, 1700, 1701, 1742, and 1848 on the lower parts of Wright Creek are held by R. Day of Florida. T. O. Connolly of Atlin worked the leases for one month and moved approximately 1,000 cubic yards of gravel. A small 'gold concentrator,' requiring 30 gallons per minute of water was used, to test for gold values on the previously hydraulicked ground.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 530.

PINE CREEK **(Fig. H, No. 18)** **(104N/12E)**

Lat. 59° 35.8′ Long. 133° 32.5′ Atlin M.D.

(1) P.M.L. Nos. 705, 1476, 1620, and 1777 on Pine Creek near Discovery are held by Karl Sieger of Atlin. About 10,000 cubic yards of gravel was sluiced from P.M.L. 1476. Two men worked for six months using a D-8 bulldozer and a 922 Caterpillar loader. The tailings were discharged into a large settling pond and the overflow was returned to Pine Creek. Approximately 2,000 gallon per minute of water was pumped from Pine Creek, about one-half mile to the bench where the work was done. The fines from the settling pond and the stockpiled topsoil were spread over previously hydraulicked areas.

(2) P.M.L. Nos. 1354 to 1356, 1374, 1475, 1888, 1902, and 1903, adjoining Sieger's leases on the east and known as the Goldrun Creek property, are held by E. D. Thachuk of White Rock. Six men worked at the property for five months under the direction of G. W. Klein, project manager. Mining was conducted with a 2½-yard Northwest dragline and a D-8 Caterpillar bulldozer equipped with rippers.

Approximately 70,000 cubic yards of overburden was moved to expose about an acre of bedrock. The pay zone averages 8 feet thick, including 4 feet of decomposed and fractured bedrock. The pay gravel was washed through an all-metal-constructed sluice box, 40 inches by 60 feet. Recovery was good, ranging in size from 1.5-ounce nuggets to minus 40 mesh material. Approximately 6,000 gallons per minute of water was used from the old hydro ditch which runs through the property, and fed to the sluice box by gravity via a 350-foot long 22-inch pipeline. The settling pond, constructed in 1973, was enlarged and the dam height increased by 2 feet. The overflow returned to Pine Creek.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 531.

BIRCH CREEK (Fig. H, No. 19) (104N/11W, 12E)

Lat. 59° 37′ Long. 133° 30′ Atlin M.D.

P.M.L. Nos. 1824 to 1829 and 1842 to 1846 are situated one-half mile above Pine Creek and are held by A. MacKenzie and A. C. Midgett of Whitehorse, Yukon Territory.

Diorite and serpentinized peridotite are exposed at the toe of a spur of Mount Munro, but most of the leasehold is covered by glacial drift. A swampy depression along the leasehold axis may be a former stream channel.

Geological reconnaissance and 7.2 line-miles of grid and magnetometer surveying were conducted on the leases.

REFERENCE: Assessment Report 5118.

SPRUCE CREEK (Fig. H, No. 17) (104N/12E)

Lat. 59° 34.5′ Long. 133° 34′ Atlin M.D.

P.M.L. Nos. 1609 and 1677, on the lower part of Spruce Creek, are held by T. S. Osborne of Atlin. Most work was done on P.M.L. 1677 and consisted of the building of an effective settling pond and sluicing approximately 8,000 cubic yards of gravel, including about 2 feet of decomposed and fractured bedrock. All work done was on a previously hydraulicked and dredged area. The overflow from the settling pond was returned to Spruce Creek. Equipment used was a TD-20 bulldozer, a 450 Ease backhoe, and a 200-gallon-per-minute pump.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 531.

McKEE CREEK (Fig. H, No. 16) (104N/5E)

Lat. 59° 28′ Long. 133° 33′ Atlin M.D.

(1) P.M.L. Nos. 1655, 1689, and 1690, on lower McKee Creek, are held by Antonio Vesnaver of Atlin. Vesnaver worked along for four months drift mining under the north bank of the creek. The pay zone consists of approximately 2 feet of clayey gravel on bedrock. About 750 cubic yards was sluiced. A small effective settling pond was utilized and the overflow returned to McKee Creek.

(2) On upper McKee Creek three new placer mining leases were staked by John R. Harvey. About 3,500 cubic yards of gravel was sluiced from previously hydraulicked area. The tailings from the hydraulicking and sluicing were disposed of in a large settling pond.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 529.

O'DONNEL RIVER (Fig. H, No. 15) (104N/6W)

Lat. 59° 22' Long. 133° 17' Atlin M.D.

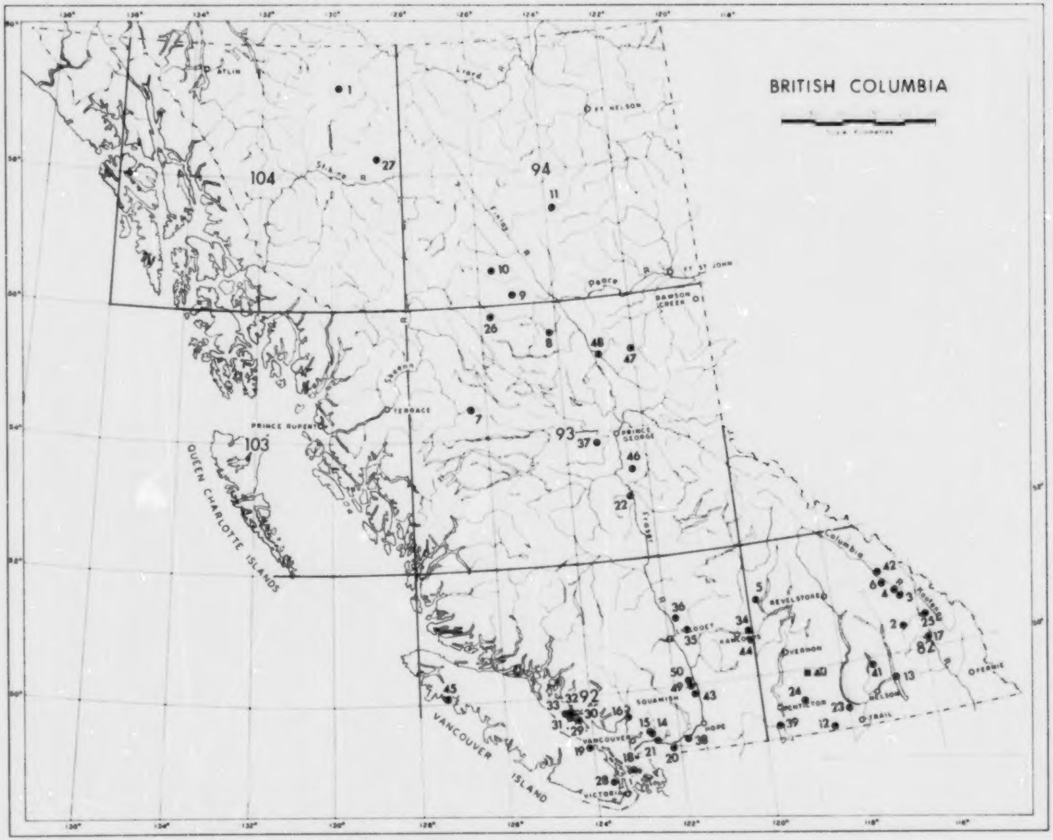
P.M.L. Nos. 1691 and 1694, on the upper part of O'Donnel River, are held by Jessie James and were worked for three months by Gordon H. Crum and partners of Atlin. About 10,000 cubic yards of gravel from an old hydraulicked area was sluiced. Equipment used included a TD-14 bulldozer and a pump. The tailings were disposed of in a large settling pond and the overflow returned to O'Donnel River.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 530.

SQUAW CREEK (Fig. H, No. 23) (114P/14E)

Lat. 59° 59' Long. 137° 05' Atlin M.D.

P.M.L. Nos. 1726 (held by C. E. Ross of Vancouver), 1727 (held by L. R. Whitney of Vancouver), and 1762 (held by P. V. Ross of Vancouver) are on the upper part of Squaw Creek and were worked by Charles Ross and partner for three months. The work consisted of hand trenching and sluicing 450 cubic yards on P.M.L. No. 1726.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ATLIN
FT NELSON
FT ST JOHN
DAWSON CREEK
Peace R
Finlay R
Liard R
Stikine R
Skeena R
Fraser
Columbia
Kootenay
PRINCE RUPERT
TERRACE
PRINCE GEORGE
REVELSTOKE
LILLOOET
KAMLOOPS
VERNON
PENTICTON
NELSON
TRAIL
FERNIE
SQUAMISH
VANCOUVER
HOPE
VICTORIA
QUEEN CHARLOTTE ISLANDS
VANCOUVER ISLAND

Figure J. Structural material and industrial mineral properties.

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GENERAL REVIEW OF STRUCTURAL MATERIALS AND INDUSTRIAL MINERALS

By J. W. McCammon

During 1974 several new processing plants began operating and a limited amount of exploration work was done on deposits of limestone, silica, and talc.

Baroid of Canada started up a new jig plant to treat ore from an open pit at their property near Spillimacheen. A plant to produce crushed stone began operation at a quarry at Watts Point just south of Squamish. The Crownite plant at Quesnel resumed treating diatomite after extensive redesign. In November, the expanded shale plant of British Columbia Lightweight aggregates was closed.

Some exploratory diamond drilling was done on limestone by Canada Cement Lafarge Ltd. near Davie Bay and by Texada Lime Ltd. near Spratt Bay – both on Texada Island. Silica deposits were explored at Easy Inlet, northeast of Strathnaver, and southeast of MacKenzie. Two talc showings northwest of North Bend received some attention.

REPORTS ON COMMODITIES

ASBESTOS

CASSIAR MINE (Fig. J, No. 1) By D.I.R. Henderson

LOCATION: Lat. 59° 19.6′ Long. 129° 49.4′ (104P/5W) LIARD M.D. About 4.8 kilometres north of Cassiar on Mount McDame between 1,788 and 2,134 metres elevation. The property is accessible from the Alaska Highway (160 kilometres south of Watson Lake) and from the Stewart-Cassiar Highway. A daily schedule airline service is available to Watson Lake from Vancouver and Edmonton.

CLAIMS: Forty-two Crown granted and five leased.

OWNER: CASSIAR ASBESTOS CORPORATION LIMITED, 1010, 85 Richmond Street West, Toronto, Ont.; operational headquarters – 20th Floor, 1055 West Hastings Street, Vancouver; mine office – Cassiar.

DESCRIPTION: The Cassiar orebody, consisting of chrysotile asbestos veinlets in a mass of serpentine, is mined from a 610-metre long and 366-metre wide open pit. The hangingwall is retreated in 45 to 75-metre-wide slices to expose the ore in the bottom of the pit. Asbestos ore is hauled by truck to the nearby primary concentrator (elevation 1,767 metres) and is then transferred to the mill by truck (11.3 kilometres by road) or by aerial tramway (4.8 kilometres). The mill is located adjacent to the company township of Cassiar which is in the Troutline Creek valley at an elevation of 930 metres.

WORK DONE:

1,037,689 tonnes of ore and 3,985,350 tonnes of waste were mined from the open pit during 1974. A total of 84,087 tonnes of fibre was produced.

Plant additions during the year included new dryer at the mill, No. 14 diesel generator, one P&H 1900-AL electric shovel, one GD-80 blasthole drill, six 75-ton trucks, and one explosives truck.

Modifications were made to the waste disposal system from the mill in an effort to reduce airborne dust emissions. Further modifications were required at year end to allow for cold waeather operations.

In August, the construction of a new, and larger capacity, aerial tramway commenced. This is expected to be completed and commissioned by August 1975. In association with this project a new primary concentrator is to be located adjacent to the mill.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 536, 537.

BARITE

TOBY CREEK BARITE (Fig. J, No. 2)

By R. W. Lewis

LOCATION: Lat. 50° 21′ Long. 116° 24.4′ (82K/8W)
GOLDEN M.D. Near the southwest corner of Lot 16154 on Toby Creek at the mouth of Jumbo Creek, 32 kilometres southwest of Invermere.

CLAIMS: JUMBO.

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, Lethbridge, Alta.; mailing address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE:

Mountain Minerals Limited owns and operates a small plant to recover barite from old tailings pond of the Mineral King mine. The operation is seasonal because of climatic conditions. Barite concentrate is hauled approximately 40 kilometres by truck along the Toby Creek road to the railroad at Athalmer, where it is loaded into cars and shipped to the company processing plant in Lethbridge, Alta.

During 1974 the plant produced 10,884 tonnes of barite from the tailings pond.

The company entered into an agreement with Purcell Development Co. Ltd. whereby Purcell has commenced a small underground mining operation at the old Mineral King mine, aimed at recovering the remaining reserves of lead, zinc, and silver ore.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 537.

BRISCO BARITE (Fig. J, No. 3)

By R. W. Lewis

LOCATION: Lat. 50° 49.8′ Long. 116° 19.5′ (82K/16W)
GOLDEN M.D. Between Templeton River and Dunbar Creek, 4 kilometres west of Brisco.

CLAIMS: WAMINECA (Lot 15044), CANYON (Lot 15045), SALMON (Lot 15046), CARMINE (Lot 15047), and NORTHISLE (Lot 15048).

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, Lethbridge, Alta.; mailing address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE:

This small underground barite mine operated throughout most of 1974 employing a crew of two or three men. The barite is hauled by truck from the mine to a primary crushing and railcar loading facility at Brisco.

During the year the company mined some 5,986 tonnes of barite from the Brisco mine and continued with underground development. Electric power was connected for the first time to the mine facilities. Construction of a new garage and workshop facility and a new explosives magazine were also completed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 538.

BAROID OF CANADA (Fig. J, No. 4)

By R. W. Lewis

LOCATION: Lat. 50° 56′ Long. 116° 29′ (82K/16W)
GOLDEN M.D. At 945 metres elevation, on the west side of Jubilee Mountain, 8.9 kilometres northwest of Spillimacheen.

CLAIMS: Former Silver Giant mine property.

OWNER: BAROID OF CANADA, LTD., Box 250, Onoway, Alta.; S. Wise, superintendent.

WORK DONE:

This company owns and operates a plant to recover barite concentrate from the tailings of the former Giant Mascot mine. The plant has operated on a seasonal basis for several years, however the supply of tailings was exhausted in August 1974. The table plant was then used to process underflow from the wet screening system of a new jig plant.

During 1974 approximately 112,000 tonnes of barite rock was mined from an open pit, crushed in the pit, hauled, and stockpiled adjacent to the jig plant. The new jig plant was placed on stream in June 1974 and became fully operational at the end of August. It is provided with secondary crushing facilities and a 42-inch, three-cell, end-flow Bendelari jig, with a rated input capacity of 363 metric tons per day.

A total of 19,400 tonnes of mine tailings was treated to produce 11,880 tonnes of crude barite concentrate. The yield of barite concentrate from the new jig plant was 5,628 tonnes. All concentrate produced was hauled by truck from the plantsite to the company processing plant at Onoway.

There were no lost-time accidents during 1974 and an average of 17 employees worked at the operation during the six-month operating season.

Surface reclamation work is proceeding according to recommendations made by the Reclamation Inspector of the Department of Mines and Petroleum Resources.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 538.

HOMESTAKE (Fig. J, No. 5)

LOCATION: Lat. 51° 07′ Long. 119° 50′ (82M/4W)
Report on this property under metals in section 82M/4W.

PARSON BARITE (Fig. J, No. 6)

By R. W. Lewis

LOCATION: Lat. 51° 01.5′ Long. 116° 39′ (82N/2E)
GOLDEN M.D. At 1,128 metres elevation, 5.6 kilometres due south of Parson.

CLAIMS: HILLTOP (Lot 14351), SNOWDROP (Lot 14352), and HONEST JOHN (Lot 15734).

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, Lethbridge, Alta.; mailing address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE: No production took place at the property during 1974, however some of the ore, mined during 1973 and stockpiled near the mine portal, was shipped to the company processing plant at Lethbridge.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 539.

APEX (Fig. J, No. 7)

LOCATION: Lat. 54° 26′ Long. 126° 26′ (93L/8W)
Report on this property under metals in section 93L/8W.

OMINECA QUEEN (Fig. J, No. 8)

By J. W. McCammon

LOCATION: Lat. 55° 31.5′ Long. 124° 06.5′ (93N/9E)
OMINECA M.D. At 823 metres elevation about 800 metres south of Manson Creek on the east bank of a small tributary stream, 3 kilometres east of the bridge where the Omineca Road crosses Manson Creek.

CLAIMS: OMINECA QUEEN 3 and 4.

OWNER: R. BJERRING of Manson Creek.

DESCRIPTION:

The Omineca Queen claims cover ground on which high-grade barite mineralization is exposed. The claims were located and recorded in October 1966 by R. Bjerring after he made the initial discovery of barite in the creek.

From the creek bed the bank rises steeply for about 6 metres in elevation and then flattens off to a gentler slope. The ground is completely drift and bush covered. The only bedrock exposed is the original discovery outcrop of barite in the creek and in areas stripped by bulldozer.

The barite lies conformably between slate walls in an area of rocks mapped as part of the Pennsylvanian (?) and Permian Cache Creek Group (*Geol. Surv., Canada,* Map 907A). Interbedded with the slate are schisted quartzite beds. Some altered volcanic flows are also present. The deposit is about 0.75 kilometre west of a major northwest-trending fault shown on map 907A.

Barite is exposed in the creek and in strippings for 75 metres northeasterly to a small gully. More barite has been uncovered in strippings 120 and 156 metres southeast of the gully. West of the gully the strike of the rocks is north 75 degrees east and the dip is generally vertical but in places the rock is contorted and sheared. The visible barite forms a single 4 to 7-metre-wide zone of fine-grained dark material that is striped parallel to foliation in the slates. It does not contain much visible impurity other than the dark colouration. At the gully there is much contortion and shearing and in stripping along the east side, the barite appears to be offset a few metres southward. In the stripped area 120 metres southeast of the gully the barite and enclosing slates are nearly vertical and strike south 55 degrees east. Two mineral zones are exposed here. A 3-metre-wide band of white barite on the north is separated from a 5-metre-wide band of dark striped material by 3 metres of slate. Most barite contacts are not well exposed but seem parallel to the slate and sharp.

Thin sections of material from the mineralized zones consist essentially of barite with variable and normally small amounts of quartz and black opaque mineral. The texture is mainly fine grained and equigranular although a few small coarse-grained patches are present. In the striped barite the quartz tends to be strung out along the stripes and the black mineral is concentrated along with it. In the unstriped barite the fabric is homogeneous but in the striped type there is a well-developed lineation with barite grains flattened and stretched into parallel alignment. The grains of this type show undulose extinction and mylonized edges. Barite appears to have replaced quartz grains.

Although the barite could possibly have formed as a sedimentary deposit it seems more likely to have formed by replacement of a quartzite or schisted quartzite before the last metamorphism.

Four samples of barite were taken for analysis: sample 1 was cut from wall to wall across 7 metres of barite exposed in the most westerly cut, directly above the creek outcrop; sample 2 was cut from wall to wall across 6.5 metres of barite in the cut 30 metres east of 1; sample 3 was cut across 4 metres of barite starting at the north wall, in the cut along the west side of the gully – the south wall was not visible; sample 4 was cut across the 5 metres plus 3 metres of barite exposed in the cut 120 metres east of the gully – the slate between the zones was omitted. The analyses expressed in percentage follow:

	BaO	SO_3	Fe_2O_3	SiO_2	G
Sample 1	54.09	27.8	0.26	8.92	4.42
Sample 2	62.79	33.8	0.29	2.15	4.42
Sample 3	63.16	33.5	0.29	1.87	4.50
Sample 4	63.15	33.5	0.23	1.60	4.54

WORK DONE: A rough tractor road has been bulldozed from the river up the east bank of the creek to the showings; about 15,000 square metres of stripping was done by bulldozer; and three diamond-drill holes were drilled. The cores and results of drilling were unavailable at the time of examination.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 490; Assessment Report 2636.

WEBER **(Fig. J, No. 9)**

LOCATION: Lat. 56° 07′ Long. 125° 03′ (94C/3E)
Report on this property under metals in section 94C/3E.

RAIN **(Fig. J, No. 10)**

LOCATION: Lat. 56° 30′ Long. 125° 35′ (94C/12E)
Report on this property under metals in section 94C/12E.

EGG, FOO **(Fig. J, No. 11)**

LOCATION: Lat. 57° 22′ Long. 123° 49′ (94G/5W)
Report on this property under metals in section 94G/5W.

BUILDING STONE

SEBAC QUARRIES **(Fig. J, No. 12)**

By J.B.C. Lang

LOCATION: Lat. 49° 01.9′ Long. 118° 22.8′ (82E/1W)
This operation includes the former Ramshead dolomite and quartzite quarries just north of the highway 4.5 kilometres east of Grand Forks and the former Bailey silica quarry 1.6 kilometres southeast of town.
CLAIMS: Lot 496 and part of Lot 492 to the north, and Lot 3816 and Lot 3817 to the south.
OWNER: M. Astrope of Calgary.
OPERATOR: STEVE BERQUE, 398 SW. Fourth Street, Grand Forks.
WORK DONE: Dolomite and quartzite deposits are worked on a demand basis. A crushing and screening plant capable of producing about 8.7 tonnes per day is on the property. Several truck loads of crushed dolomite were sent to the Vancouver market during the year.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 541.

COTTAGE **(Fig. J, No. 13)**

LOCATION: Lat. 49° 39′ Long. 116° 49′ (82F/10W)
Four kilometres south of the Crawford Bay post office, about 500 metres west of Crawford Bay.
CLAIMS: COTTAGE 1 and 2.
OWNER: INTERNATIONAL MARBLE & STONE COMPANY LTD., 202, 5920 Macleod Trail South, Calgary, Alta. T2H 0K1.
WORK DONE: Two blast holes, 16 metres and 46 metres deep, were drilled.
REFERENCE: Assessment Report 4923.

PITT RIVER QUARRY (Fig. J, No. 14)

By J. W. Robinson

LOCATION: Lat. 49° 17.4′ Long. 122° 39.3′ (92G/7E)
On the East bank of Pitt River on the northern side of Sheridan Hill, 65 kilometres north of Pitt Meadows.

OWNER: DILLINGHAM CORPORATION OF CANADA LTD., Foot of Brooksbank Avenue, North Vancouver.

WORK DONE: Twenty-five men quarried, crushed, and screened 544,200 tonnes of diorite for crushed rock, rip-rap, and armour rock. A new maintenance shop was constructed and a new office trailer was installed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 541.

GILLEY QUARRY (Fig. J, No. 15)

By J. W. Robinson

LOCATION: Lat. 49° 19.2′ Long. 122° 40.5′ (92G/7E)
On the west bank of Pitt River, immediately south of the mouth of Munro Creek.

OWNER: CONSTRUCTION AGGREGATES LTD., 850 Southwest Marine Drive, Vancouver; Pitt River Quarry, Box 98, Port Coquitlam.

WORK DONE: Forth-three men produced quartz diorite for crushed rock, rip-rap, and armour rock.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 542.

WATTS POINT QUARRY (Fig. J, No. 16)

By J. W. Robinson

LOCATION: Lat. 49° 39.2′ Long. 123° 12.4′ (92G/11E)
Just west of Highway 99, 4.8 kilometres south of Squamish.

OWNER: C. R. AGGREGATE SALES LTD., Box 1608, Squamish.

WORK DONE: A crushing and screening plant was installed during the year. Twelve men produced 480,710 tonnes of crushed and sized dacite rock.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 493.

CLAY AND SHALE

THUNDER HILL (Fig. J, No. 17)

By R. W. Lewis

LOCATION: Lat. 50° 09′ Long. 115° 49.9′ (82J/4W)
GOLDEN M.D. At the bottom of Thunder Hill, 3.2 kilometres west of Canal Flats.

CLAIMS: THUNDER HILL 1 and 2.

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, Lethbridge, Alta.; mailing address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE: For a number of years Mountain Minerals Limited has produced small tonnages of kanalite shale from a small quarry immediately west of the

Canadian Pacific Railroad at Canal Flats. There was no production in 1974, however the company did ship some shale from a previously mined stockpile.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 543.

BRITISH COLUMBIA LIGHTWEIGHT AGGREGATES LTD. (Fig. J, No. 18)

By W. C. Robinson

LOCATION: Lat. 48° 48.1' Long. 123° 11' (92B/14E)
The quarries and plant are on the peninsula between Winter Cove and Lyall Harbour, at the north end of Saturna Island.

OWNER: BRITISH COLUMBIA LIGHTWEIGHT AGGREGATES LTD., 610, 200 Granville Street, Vancouver.

DESCRIPTION: The quarries are in shale of the Upper Cretaceous Nanaimo Group. Lightweight aggregate was produced by expanding shale in a plant located a short distance west of the quarries.

WORK DONE: Twenty men mined 28,712 tonnes of shale and produced and shipped 36,923 cubic metres of expanded shale aggregate. Production ceased on November 17, 1974 and it has been reported that the plant will be dismantled. Production of expanded shale aggregate commenced during September 1959 and continued during the following years until the closure in 1974.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, p. 264; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 544.

DUNSMUIR SHALE PIT (Fig. J, No. 19)

By W. C. Robinson

LOCATION: Lat. 49° 11.8' Long. 124° 05.5' (92F/1E)
At 274 metres elevation, in the northeast part of Block 226, Dunsmuir Land District, adjoining Weigles (Black Jack, Dumont) road on the north, 3.2 kilometres south and west of the powerline at Brannen Lake.

OWNER: Canada Cement Lafarge Ltd.

OPERATOR: BUTLER-LAFARGE LTD., Box 435, Nanaimo.

DESCRIPTION: The quarry is in Upper Cretaceous marine shale of the Haslam Formation.

WORK DONE: Shale was produced for use in cement manufacture. A crew averaging two men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 544.

RICHMIX QUARRY (Fig. J, No. 20)

By J. W. Robinson

LOCATION: Lat. 49° 03.5' Long. 122° 11.7' (92G/1E)
Adjoins Kilgard on the northeast.

OWNER: MUTUAL MATERIALS LIMITED, 2890 East Kent Avenue, Vancouver.

WORK DONE: Fireclay was quarried and trucked to the plant in Vancouver, where firebrick was manufactured.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 544.

CLAYBURN INDUSTRIES LTD. (Fig. J, No. 20)

By J. W. Robinson

LOCATION: Lat. 49° 03.2′ Long. 122° 17.3′ (92G/1W)
49° 03.5′ 122° 11.7′ (92G/1E)
Plant at Abbotsford; mine and quarries at Kilgard.

OWNER: CLAYBURN INDUSTRIES LTD., Box 160, Abbotsford.

WORK DONE: There were 180 metres of drifts and 225 metres of crosscuts driven during 1974 in the Fireclay mine at Kilgard. Fireclay produced from the underground mine at Kilgard was 15,496 tonnes.Open-pit development consisted of 40,392 cubic metres of soil and 53,738 tonnes of sandstone. Brick clay produced was 71,163 tonnes. The resident manager is B. T. Stephens. There were five employees working underground, nine employees working in the open pit, and one supervisor at year end.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 544.

HANEY BRICK AND TILE LIMITED (Fig. J, No. 21)

By J. W. Robinson

LOCATION: Lat. 49° 12.6′ Long. 122° 35.9′ (92G/2E)
On the north bank of Fraser River, at the east edge of Haney.

OWNER: HANEY BRICK AND TILE LIMITED, Box 38, Maple Ridge.

WORK DONE: Clay was quarried adjacent to the plant during the year. This was manufactured into hollow clay drain tile, structural tile, facebrick, common brick, flue lining, and flower pots. Approximately 90 per cent of the production is hollow clay drain tile. The resident manager is A. G. Findlay. At year end there were 30 employees on the payroll.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 544,

DIATOMITE

CROWNITE INDUSTRIAL MINERALS LTD. (Fig. J. No. 22)

By A. D. Tidsbury

LOCATION: Lat. 52° 57.6′ Long. 122° 32.2′ (93B/15E)
At Quesnel.

CLAIMS: W½ Lot 906, N½ of NE½ and S½ of SE¼ of District Lot 906, Lots 1 and 2 of District Lot 222, Cariboo District Plan 6720, part N Lot 222 to 'Old Cariboo Highway,' Cariboo District, Lot 414, Cariboo District.

OWNER: CROWNITE INDUSTRIAL MINERALS LTD., Box 4159, Quesnel.

WORK DONE:

Diatomaceous earth and red shale are mined in benches with a front-end loader and trucked to the preparation plant.

Research and reconstruction of the processing facility continued well into 1974. Operations were resumed in September, circuits being phased in as new equipment arrived and was installed.

Revised ASTM standards and the new plant permit the company to market a wide range of product with controlled specifications.

In 1974, 4,038 tonnes was milled, 1,297 tonnes was bagged, and 2,740 tonnes of waste was produced.

Connected horsepower totals 1,100; electrical power consumed was 1,158,000 kilowatt hours.

Major mobile equipment used consists of: one D-6 bulldozer. one 950 Caterpillar front-end loader, one 20-ton Renn trailer, and two forklifts.

During 1974, average employee roster was 20. At year end, with production increasing, some 40 employees were at work.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 545.

FLUORITE

WEWA (Fig. J, No. 23)

LOCATION: Lat. 39° 17' Long. 118° 00' (82E/8E; 82F/5W)
Report on this property under metals in section 82E/8E.

DOE, IVY (Fig. J, No. 24)

LOCATION: Lat. 49° 31' Long. 119° 10' (82E/11E)
Report on this property under metals in section 82E/11E.

EGG, FOO (Fig. J. No. 11)

LOCATION: Lat. 57° 22' Long. 123° 49' (94G/5W)
Report on this property under metals in section 94G/5W.

GYPSUM

WESTERN GYPSUM LIMITED (Fig. J, No. 25) By R. W. Lewis

LOCATION: Lat. 50° 30' Long. 115° 54' (82J/5W)
GOLDEN M.D. The quarry is between 1,200 and 1,500 metres elevation on the north side of Windermere Creek, 12.9 kilometres east of Windermere.
CLAIMS: The company holds 41 Crown-granted claims.
OWNER: Westroc Industries Ltd.

OPERATOR: WESTERN GYPSUM LIMITED, Box 217, Invermere V0A 1K0; R. J. Willox, quarry manager.

WORK DONE:

The gypsum is drilled and blasted at the quarry face, fed into the primary crushing plant, and then conveyed overland by a series of belt conveyors to a truck-loading point on the valley floor. Two 100-ton trucks and one 70-ton truck are used to haul the gypsum over approximately 17 kilometres of private paved road to the secondary crushing, screening, and car-loading plant at Wilmer. The final product is shipped by rail for further processing at Calgary and Vancouver.

The following equipment was used: one 1971 No. 988 loader, one 1974 Hough 560 front-end loader, one 1973 D-8 tractor, one 1973 Kenworth 100-ton off-highway truck, one 1971 Hayes 100-ton off-highway truck, one 1969 Auto Car 70-ton off-highway truck.

The company employed 27 persons on average during the summer months and 18 during the winter months. The quarry is worked on a two-shift basis during the summer and on a one-shift basis during the winter.

A total of 427,197 tonnes of gypsum was mined in the quarry, put through the primary crusher, and hauled to the stockpile at Wilmer. A total of 390,917 tonnes of gypsum was treated at the secondary plant and shipped by rail to Calgary and Vancouver.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 546.

JADE (NEPHRITE)

Jade (nephrite) is known to occur *in situ* in serpentinite rocks and as boulders in alluvial deposits at a variety of localities in the Province.

The first jade mined was picked up by the Indians from bars along the Fraser and Bridge Rivers in the vicinity of Lillooet. Later jade was found on bars along the Fraser River as far downstream as Yale, on the Coquihalla River, and on the Bridge River as far as the junction of the Yalakom. Subsequently it was found on Hell, Marshall, and Noel Creeks, also on Kwanika, O'Ne-el, and Odgen Creek and Mount Ogden in the Omineca; and in the north on Wheaton, Seywerd, and Thibert Creeks, on bars on the Liard River, at the Cassiar asbestos mine, and in serpentinite at the head of Blue River.

In 1974 production was reported by the following individuals and companies:

Cassiar Lapidary, Cassiar
Ben Seywerd, Seywerd Creek, Dease Lake
Continental Jade Ltd., Mount Ogden
Comaplex Resources International Ltd., Marshall Creek

LEE (Fig. J, No. 26)

LOCATION: Lat. 55° 50.5′ Long. 125° 50.3′ (93N/13W)
OMINECA M.D. Southwest of Mount Ogden.

CLAIMS: LEE, totalling approximately 50.
OWNER: NEW WORLD JADE LTD., 1696 West First Avenue, Vancouver.
WORK DONE: Magnetometer survey, 10.5 line-kilometres covering Lee 1-4, 8, 13, 14 and Lee 13, 28-31 Fractions.
REFERENCE: Assessment Report 5221.

CWA, JADE (Fig. J, No. 27)

LOCATION: Lat. 58° 15′ Long. 128° 39′ (104I/2E, 7)
LIARD M.D. The claim groups are scattered between King Mountain and 3.2 kilometres east of Provencher Lake.
CLAIMS: CWA 1 to 4, JADE 1 to 6, TO 1 to 7, EL 1 and 2, JW 1 to 13, KING KONG 1 and 2, NCW 9 and 10.
OWNER: Nephro-Jade Canada Ltd.
OPERATORS: DELPHI RESOURCES LTD. and NEPHRO-JADE CANADA LTD., 4458 West Tenth Avenue, Vancouver.
DESCRIPTION: Upper Devonian and Lower Mississippian metasedimentary and metavolcanic rocks are intruded by numerous bodies of serpentinized ultramafic rocks. Nephrite occurs in some of these bodies, as marginal alteration bands and as lenses and blocks associated with diopside, quartz, and tremolite within the serpentinite. It also occurs as talus blocks and stream boulders.
WORK DONE: 1973 – surface geological mapping around jade prospects at 1 inch equals one-half mile.
REFERENCE: Assessment Report 5100.

NCW, CWL (Fig. J, No. 27)

LOCATION: Lat. 58° 16′ Long. 128° 39′ (104I/7E)
LIARD M.D. One and six-tenth kilometres east and 1.6 kilometres southeast of Provencher Lake.
CLAIMS: NCW 1 to 8, CWL 1 to 13, CWE 1 to 4.
OWNER: Marvin G. Kemp.
OPERATOR: FROBEX LIMITED, 902, 8 King Street East, Toronto, Ont.
DESCRIPTION: Deformed and metamorphosed sandstone and limestone are intruded by small bodies of serpentinized peridotite which contain lenses of nephrite jade.
WORK DONE: 1973 – mapping of the serpentinite and jade at irregular scales.
REFERENCES: Assessment Reports 4801, 4802.

LIMESTONE

COBBLE HILL QUARRY (Fig. J, No. 28)

By W. C. Robinson

LOCATION: Lat. 48° 40.6' Long. 123° 37.4' (92B/12E)
At the southwest corner of Cobble Hill, 3.2 kilometres southwest of Cobble Hill Station.

OWNER: BRITISH COLUMBIA CEMENT COMPANY LIMITED, RR 1, Mill Bay.

WORK DONE: Limestone produced for use in Bamberton cement plant, 763,694 tonnes. A crew of 24 men was employed at the quarry.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 548.

PAUL (Fig. J, No. 29)

LOCATION: Lat. 49° 38' Long. 124° 24' (92F/9W)
Approximately 8 kilometres southeast of Gillies Bay, west side of Texada Island, between sea level and 305 metres elevation.

CLAIMS: PAUL 1 to 15, 19 to 34, 37, 38, 42, 44 to 46, 50 to 52.

OWNER: LAFARGE CANADA LTD., 1051 Main Street, Vancouver V6A 2V9.

WORK DONE: Claims and surface workings (drill-hole locations) surveyed; topographic mapping, surface geological mapping, 1 inch equals 200 feet covering all claims; surface diamond drilling, 25 holes totalling 1,787 metres and road construction 3,500 metres covering Paul 8-12 and 29-31.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 233; Assessment Report 5273.

IMPERIAL LIMESTONE QUARRY (Fig. J. No. 30)

By J. W. Robinson

LOCATION: Lat 49° 44.4' Long. 124° 31.7' (92F/10E)
On the summit of the hill on Lot 500, 1.2 kilometres southwest of Spratt Bay on the north coast of Texada Island, 3.2 kilometres southeast of Vananda.

OWNER: IMPERIAL LIMESTONE COMPANY LIMITED, 5427 Ohio Avenue South, Seattle, Washington 98134.

WORK DONE: The quarry was operated on Lot 500 to produce material for plants at Vananda dock and Spratt Bay. The plant at Vananda dock was dismantled during the year. Equipment was installed at the Spratt Bay plant to produce coarse limestone, stucco dash, glass grit for the manufacture of bottles, fine sand, and sports fuel which is used for whiting.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 548.

RAVEN (Fig. J, No. 30)

LOCATION: Lat. 49° 44′ Long. 124° 30′ (92F/10E)
South and southwest of Spratt Bay, Texada Island, 1.2 kilometres north of Myrtle Lake at approximately 100 metres elevation.

CLAIMS: WILL 3 to 6, WILL 3 Fraction, MOLLY, MOLLY 1 to 7, KELLY JO Fraction, WILLY I and II, WILLY 3 to 17.

OWNER: TEXADA LIME LTD., 309, 198 West Hastings Street, Vancouver V6B 1H2.

WORK DONE: Five BQ diamond-drill holes totalling 335 metres were drilled and all holes intersected grey, massive limestone with some inclusions of schist, intruded by a few andesite dykes.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 548; Assessment Report 4903 (WILL).

IDEAL CEMENT QUARRY (Fig. J, No. 31)

By J. W. Robinson

LOCATION: Lat. 49° 42.9′ Long. 124° 33.8′ (92F/10E)
On Lot 25, Texada Island, about 4 kilometres south of Vananda.

OWNER: IDEAL CEMENT COMPANY (Rock Products Division), 610, 1200 West Pender Street, Vancouver V6E 2S9.

WORK DONE: Limestone quarried, 1,141,006 tonnes; limestone shipped, 1,105,633 tonnes. During the year construction of new crushing, conveying, stockpiling, and barge-loading facilities was completed. A crew of 38 men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 548.

VANANDA QUARRY (Fig. J, No. 32)

By J. W. Robinson

LOCATION: Lat. 49° 45′ Long. 124° 31.9′ (92F/15E)
On the north coast of Texada Island, 1.6 kilometres southeast of Vananda.

OWNER: CANADA CEMENT LAFARGE LTD (Pacific Region), 1051 Main Street, Vancouver V6A 2V9.

WORK DONE: This quarry was formerly called the Beale Quarry. Limestone quarried, 921,966 tonnes; limestone shipped, 917,884 tonnes. A crew averaging 24 men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 549.

DOMTAR QUARRY (Fig. J, No. 33)

By J. W. Robinson

LOCATION: Lat. 49° 47.2′ Long. 124° 37.1′ (92F/15E)
At the north end of Texada Island on Lots 13, 17, 22, 23, 34 to 39, 271, 305, and 350.

OWNER: DOMTAR CHEMICALS LIMITED (Lime Division), 470 Granville Street, Vancouver; quarry office, Blubber Bay.

WORK DONE: Limestone quarried, 871,145 tonnes; limestone shipped, 686,442 tonnes. Pit preparation consisted of stripping 72,809 cubic metres of waste rock. A crew averaging 38 men was employed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 549.

HARPER RANCH QUARRY (Fig. J, No. 34)

By E. Sadar

LOCATION: Lat. 50° 40.3′ Long. 120° 03.9′ (92I/9E)
North of cement plant, 17.7 kilometres east of Kamloops.

CLAIMS: CAM 1 to 10.

OWNER: Canada Cement Lafarge Ltd.

OPERATOR: PLATEAU CONSTRUCTION LIMITED, Kamloops.

WORK DONE: Three percussion holes drilled; 207,830 tonnes of limestone shipped to cement plant; average of six people employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 549.

PAVILION LAKE LIME (Fig. J, No. 35)

By E. Sadar

LOCATION: Lat. 50° 49′ Long. 121° 39′ (92I/13E)
On Highway 12, 38 kilometres west of its junction with Highway 97.

CLAIMS: Plant and quarry entirely on Pavilion Indian Reserve 3 and 3A.

OWNER: STEEL BROTHERS CANADA LIMITED, Cache Creek.

DESCRIPTION: High calcium limestone occurs on the north side of Highway 12, in Marble Canyon. This limestone strikes north 60 degrees west and dips steeply to the southwest.

WORK DONE: Processing plant erected and quarry opened in 1974. Approximately 18 persons were employed.

COLUMBIA LIME PRODUCTS (Fig. J, No. 36)

LOCATION: Lat. 51° 05′ Long. 121° 50′ (92P/4W)
Headwaters of Porcupine Creek, approximately 1.6 kilometres north of Jesmond Road and at the Porcupine Creek Crossing, between 1,520 and 2,316 metres elevation.

CLAIMS: District Lot 2203.

OWNER: COLUMBIA LIME PRODUCTS LIMITED, 309, 198 West Hastings Street, Vancouver V6B 1H2.

WORK DONE: Property surveyed at 1 inch equals 400 feet scale; road construction, 4.8 kilometres.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 550.

DAHL LAKE QUARRY (Fig. J, No. 37)

By A. D. Tidsbury

LOCATION: Lat. 53° 47.5′ Long. 123° 17′ (93G/14W)
On the hill at the northeast corner of Dahl Lake, 35 kilometres southwest of Prince George.

CLAIMS: District Lot 3474.

OWNER: NORTHROCK INDUSTRIES LTD., 3905 – 18th Avenue, Prince George.

DESCRIPTION:

Limestone is exposed on two knolls forming a corner off the main hill, at 880 metres elevation. Continuity of the limestone is interrupted by chert bands, minor faulting, and variation in composition.

Favourable areas are quarried, transported to the crushing-screening-washing facility, and marketed as a clean product in the minus 19-centimetre plus 8-centimetre size range.

Major markets are the Prince George and Inter-Continental pulp mills in Prince George.

WORK DONE:

During 1974, 49,000 tonnes of quarried product was processed and 72,560 tonnes of waste was mined, some being sold as fill and rip-rap.

Exploration drilling totalled 195 metres, and blasthole drilling totalled 19,050 metres. Explosives consumed amounted to 36 tonnes.

Major equipment includes three front-end loaders, the processing facility, and wagon drills. Power generation capacity is 300 kilovolt amperes, with 290 horsepower connected.

First-aid and mine-rescue attendance resulted in three certificates being issued. Average employed was eight persons over the six-month operating season.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 601.

MARL

CHEAM MARL PRODUCTS (Fig. J, No. 38)

By J. W. Robinson

LOCATION: Lat. 49° 11.5′ Long. 121° 45′ (92H/4W)
At Cheam Lake near Popkum.

OWNER: CHEAM MARL PRODUCTS LIMITED, 13 Fletcher Street South, Box 113, Chilliwack.

WORK DONE: Three men are employed at the Cheam Marl open pit. The material mined consists of a post-glacial deposit of marl that forms the bed of former Cheam Lake, drained several years ago. Marl and topsoil are excavated by two small draglines. The marl is spread on an asphalt drainage pad and air dried for a year. It is then loaded into trucks by a third dragline and delivered to consumers for agricultural use. Marl produced, 18,412 tonnes; marl shipped, 14,889 tonnes.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 551.

SAND AND GRAVEL

SAND AND GRAVEL DEPOSITS ON THE SUNSHINE COAST PORT MELLON TO POWELL RIVER (92F/9, 16; 92G/5, 12)

By J. W. McCammon

During the 1974 field season two months were spent on a reconnaissance survey of the surficial geology of the Sunshine Coast area between Port Mellon and Powell River (latitude 49° 22' to 46'; longitude 123° 25' to 124° 20'). The object of the survey was to study the sand and gravel potential of the region. In brief, it would appear that small to moderate supplies of sand and gravel are available, but, except at the Chapman Creek delta, no large recoverable reserves are present in the area examined.

Bare bedrock is exposed over much of the area. A relatively thin mantle of glacial till or till covered by a thin layer of marine lag sand, lag gravel, clay, or stoney clay forms the surface layer over most of the remaining area. In a few places sand and gravel alluvial fans or deltas constitute the uppermost deposits. Bog and swamp deposits are minimal. Marine deltas and deposits containing marine fossils extend upward to elevations of between 170 and 200 metres above present sea level.

Sand and gravel are found in recent stream and beach deposits, in post-glacial deltas, fans, and veneers, in kames and ridgelets, and in outwash deposits older than the latest till. Most of the deltas and pre-till deposits observed have been or are being worked.

The recent stream deposits are all fairly small and most, if not all, of the beach deposits are along residentially developed seafront so it is unlikely either type can offer commercial possibilities.

Raised deltas and alluvial fans occur up to 185 metres above present sea level along the sides of most streams. These have provided much of the sand and gravel produced to date. The largest reserve of this type is contained in the wide delta complex at the mouth of Chapman Creek, just east of Sechelt. Several small pits have been operated in this delta in the past and two are now worked periodically. Unfortunately much of the deposit consists of sand and very sandy gravel. Other deltaic and fan deposits are relatively small although they now provide material for at least 12 operating pits.

Small irregular kames and ridgelets, along the upper reaches of some of the main streams at elevations above the delta deposits, contain poorly sorted sand and gravel. One or two had provided small amounts of aggregate, probably for logging roads.

The sub-till sand and gravel deposits underlie undefined but perhaps sizeable areas between Highway 101 and Gower Point, on the high land east of Northwest Bay Road 3.5 kilometres northwest of Sechelt, and at Powell River. Pits operate in all of these deposits now, but further development is confined to a large extent by residential subdivisions.

Data on sand and gravel production are presented on the following pages. The abbreviations used in the table for the types of sand and gravel produced are as follows: AA = asphalt aggregate; SA = sized aggregate; WS = washed and sized aggregate; S = sand; RP = run-of-pit material; CA = crushed aggregate; AP = asphalt paving mix; RM = ready-mix concrete.

Sand and Gravel Pits

Location	Operator	Equipment	Men	Production
Howe Sound—				
(1) Britannia Beach	Construction Aggregates Ltd., 850 South West Marine Dr., Vancouver	Bulldozers, front-end loaders, trucks, crushing, washing, screening	30	WS, RP, and SA.
(2) Furry Creek	Construction Aggregates Ltd., 850 South West Marine Dr., Vancouver	Bulldozers, front-end loaders, trucks, crushing, washing, screening	19	SA and WS.
(3) Mamquam River	Coast Aggregates Ltd., Squamish	Front-end loader, trucks, crushing, screening	3	RP and SA.
(4) North of Cemetery Road, Gibsons	Universal Aggregate Ltd., Box 323, Gibsons	Front-end loader, crushing, screening	2	RP and SA.
(5) Cemetery Road, Gibsons	P. & W. Development Ltd., Box 248, Gibsons	Front-end loader, crushing, screening, ready-mix	1*	RP and RM.
(6) Veterans Road, Gibsons	Gibsons Building Supplies Ltd., Gibsons	Front-end loader, crushing, screening, washing	3	RP and WS.
(7) South of Sechelt Highway, west of Veterans Road, Gibsons	Gibsons Building Supplies Ltd., Gibsons	Front-end loader	1*	RP.
(8) Porpoise Bay Road, Sechelt	L. & H. Swanson Ltd., Box 172, Sechelt	Front-end loader, trucks, screening, ready-mix	14	RP, SA, and RM = 17,990 yd.
Jervis Inlet—				
(1) Treat Creek	Delta Rock Ltd., Box 1100, Coquitlam	Front-end loaders, crushing, screening	10	RP and SA.
(2) Lang Bay—1 mile north of Lang Bay	Hawkins Sand & Gravel, 3873 Gordon Ave., Powell River	Front-end loader, crushing, screening, washing	2	RP, WS, and SA.
Powell River—				
(1) Off Allen Road, 3 miles northeast of Westview	P. Nassichuk, 7123 Alberni, Powell River	Front-end loader, screening	1	RP and S.
(2) Yukon Avenue, Cranberry Lake	John Sarnowski, RR 1, Powell River	Front-end loader, crushing, screening, washing	3	RP, WS, and SA.
(3) Paradise Valley Road, Hammil Lake	Best Bulldozing Ltd., 4668 Fernwood Ave., Powell River	Front-end loader, truck	1*	RP.
Vancouver Island—				
(1) Campbell River—north of Buttle Lake Road at Elk Falls Road	Department of Highways	Front-end loader, screening	—	RP and SA.

*Part-time

Sand and Gravel Pits—*Continued*

Location	Operator	Equipment	Men	Production
Vancouver Island—Continued				
(2) Campbell River—south of Buttle Lake Road at Elk Falls Road	Garry Chadsey Trucking Ltd., 1120 South Murphy St., Campbell River	Front-end loader	1*	RP.
(3) Campbell River—north of Buttle Lake Road at Elk Falls Road	Gord Noren Trucking Ltd., 1120 South Murphy St., Campbell River	Front-end loader, crushing, screening	4*	RP, CA, SA, and AA.
(4) Campbell River—south of Buttle Lake Road at Elk Falls Road	Antonelli Trucking Ltd., Box 189, Campbell River	Front-end loader	3	RP.
(5) Campbell River—south of Buttle Lake Road at Elk Falls Road	Upland Excavating Ltd., Box 429, Campbell River	Front-end loader, crushing, screening, washing	2	RP, CA, and WS.
(6) Painter's Spit, Campbell River	Island Ready-Mix Ltd., Box 1145, Campbell River	Front-end loader, high-line scraper, crushing, washing, screening, ready-mix	3	CA, WS, and RM.
(7) Courtenay—Cumberland Road near Cumberland	W. J. Woods Trucking Ltd., Box 3157, Courtenay	Front-end loader, screening	3	RP and AS.
(8) Courtenay—Cumberland Road near Cumberland	Ross Gravel Ltd., RR 2, Courtenay	Front-end loader, crushing, screening	3*	RP, CA, and SA.
(9) Courtenay—Cumberland Road near Courtenay	Department of Highways	Front-end loader, screening	—	RP and SA.
(10) Courtenay—Cumberland Road near Courtenay	Island Ready-Mix Ltd., Box 3008, Courtenay	Front-end loader, crushing, washing, screening, ready-mix	3	RP, CA, WS, and RM = 129,472 yd.
(11) Courtenay—Cumberland Road near Courtenay	Courtenay Grading Ltd., 35 Rod and Gun Road, Courtenay	Front-end loader, screening	1	RP and SA.
(12) Courtenay—Cumberland Road near Courtenay	R. E. Longland Trucking Ltd., Box 1226, Comox	Front-end loader, screening	2	RP and SA = 67,127 yd.
(13) Cockrane Road, Qualicum Bay	Clark's Ready Mix Sand and Gravel, RR 1, Qualicum Bay	Front-end loader, washing, screening	2	RP and WS.
(14) Hector Road, Alberni	Dolan's Ltd. Sand and Gravel, Box 1193, Port Alberni	Front-end loader	1*	RP.
(15) McKenzie Road, Alberni	Dolan's Ltd. Sand and Gravel, Box 1193, Port Alberni	Front-end loader	2	RP.
(16) Alberni	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S = 12,474 yd.
(17) Ucluelet	Department of Highways	Front-end loader, screening	—	RP, SA, and S = 8,084 yd.
(18) Church Road, Errington	G. Holland, RR 1, Parksville	Front-end loader, crushing, screening	2*	RP, CA, and SA.

Vancouver Island—Continued				
(19) Errington	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S = 23,573 yd.
(20) Parksville, 2 miles west	Chew Construction Ltd., 575 Gorge Rd. East, Victoria	Front-end loader	—	RP.
(21) Parksville, 2 miles west	Jim Jenkins Ltd., Box 396, Parksville	Front-end loader	1*	RP.
(22) Parksville	Jenkins Contracting Ltd., Box 282, Parksville	Front-end loader	—	RP = 77,116 yd.
(23) Kay Road, Northwest Bay	Island Pre-Cast Concrete Ltd., Box 970, Parksville	Front-end loader, crushing, screening	3	RP, CA, and SA.
(24) Aulds Road, Nanaimo	R. Simpson, RR 1, Lantzville	Front-end loader	1*	RP.
(25) Dumont Road, Nanaimo	Fred Barr, 2124 Northfield Rd., Nanaimo	Front-end loader	1	RP.
(26) Dumont Road, Nanaimo	Reg Dorman's Trucking & Fuel Ltd., 697 Howard Ave., Nanaimo	Front-end loader, crushing, screening	5*	RP, CA, and SA.
(27) Dumont Road, Nanaimo	Department of Highways	Front-end loader, crushing, screening	—	
(28) McGirr Road, Nanaimo	Department of Highways	Front-end loader, screening	—	RP, CA, SA, and S = 79,156 yd.
(29) Dumont Road, Nanaimo	Sinclair Ganderton Contractors Ltd., 3575 Shenton Rd., Nanaimo	Front-end loader, crushing, screening	3	RP, CA, and SA = 64,146 yd.
(30) Extension	E. Greenaway Sand and Gravel, RR 1, Nanaimo	Front-end loader, screening	1*	RP and SA.
(31) Cassidy	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S.
(32) Cassidy, ½ mile west of Island Highway, north of Nanaimo	Hub City Paving Ltd., Box 427, Nanaimo	Front-end loader, crushing, screening, washing	9	RP, CA, and WS = 266,452 yd.
(33) Spruston Road, Cassidy	J. Milner Trucking, 1684 Chickadee Cres., Nanaimo	Front-end loader	—	RP.
(34) Spruston Road, Cassidy	J. Milner Trucking, 1684 Chickadee Cres., Nanaimo	Front-end loader, screening	2	RP and SA = 38,514 yd.
(35) Spruston Road, Cassidy	Hub City Paving Ltd., Box 427, Nanaimo	Front-end loader	1*	RP.
(36) Rosevear Road, Duncan	North Cowichan Gravel Supplies, RR 4, Duncan	Front-end loader	1*	RP.
(37) Duncan—Cowichan Lake Road	Duncan Paving Ltd., Box 815, Duncan	Front-end loader, crushing, screening	3	RP, CA, SA, and AA = 80,577 yd.

*Part-time

Sand and Gravel Pits—*Continued*

Location	Operator	Equipment	Men	Production
Vancouver Island—Continued				
(38) Duncan	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S = 17,337 yd.
(39) Old Duncan-Cowichan Lake Road	Butler-Lafarge Ltd., Canada Ave., Duncan	Front-end loader, crushing, washing, screening, ready-mix	8	RP, CA, WS, and RM.
(40) Duncan—Koksilah	Armour & Saunders Ltd., 435 Truck Rd., Duncan	Front-end loader, crushing, screening, washing, ready-mix	13	RP, CA, WS, and RM = 118,986 yd.
(41) Langtry Road, Duncan	Butler-Lafarge Ltd., Canada Ave., Duncan	Front-end loader	2*	RP.
(42) Cowichan Bay	Gravel Hill Supplies Ltd., 194 Kenneth St., Duncan	Front-end loader, washing, screening, ready-mix	8	RP, WS, and RM.
(43) Hillbank	Satellite Sand and Gravel Co. Ltd., Box 1, Cobble Hill	Front-end loader	3	RP.
(44) Hillbank	R. C. Forrest, Cowichan Station	Front-end loader	1*	RP and topsoil.
(45) Hatch Point	Thompson Ready Mix, 4491 North Rd., Burnaby	Front-end loader, crushing, washing, screening	2*	RP, CA, and WS.
(46) Goldstream—Sooke Lake Road at Humpback Road	O.K. Trucking Co. Ltd., 2840 Nanaimo St., Victoria	Front-end loader	2*	RP.
(47) Goldstream—Turner Meadows	E. Nixon Ltd., 400 Burnside Rd. East, Victoria	Front-end loader, screening	3	RP and SA.
(48) Keating Cross Road, Saanich	D. S. McHattie, RR 3, Victoria	Front-end loader	1	RP.
(49) Keating Cross Road, Saanich	Butler Brothers Supplies Ltd., Box 4066, Station 'A', Victoria	Front-end loader, shovel, washing, screening, ready-mix	9	RP, WS, and RM.
(50) Cordova Bay Road, Saanich	Trio Ready-Mix (1971) Ltd., 773 Cordova Bay Rd., Victoria	Front-end loader, crushing, washing, screening, ready-mix	3	RP, CA, WS, and RM = 97,157 yd.
(51) Langford Lake	Oakcrest Food Stores Ltd., Box 1355, Victoria	Front-end loader, screening	2*	RP and SA.
(52) Langford	Columbia Ready-Mix Ltd., 860 Attree Rd., Victoria	Front-end loader, crushing, washing, screening, ready-mix	3	RP, CA, WS, and RM.
(53) Metchosin	Columbia Ready-Mix Ltd., 860 Attree Rd., Victoria	Front-end loader, screening	3	RP and SA = 118,764 yd.
(54) Metchosin	Mattison & Patterson Ltd., 3421 Bonair Place, Victoria	Front-end loader	1	RP.
(55) Metchosin	Construction Aggregates Ltd., 3497 Metchosin Rd., Victoria	Front-end loader, crushing, washing, screening	14	RP, CA, WS, and AA.

Vancouver Island—Continued				
(56) Sooke—Sooke Road, east of Milnes Landing	Department of Highways	Front-end loader, screening	—	RP and SA.
(57) Sooke—Sooke Road, east of Milnes Landing	Butler Brothers Supplies Ltd., Sooke Div., Box 549, Sooke	Front-end loader, crushing, washing, screening, ready-mix	4*	RP, CA, WS, and RM.
Lasqueti Island	Department of Highways	Front-end loader	—	RP = 1,913 yd.
Gulf Islands—				
(1) Gabriola Island	Department of Highways	Front-end loader	—	RP = 6,891 yd.
(2) Thetis Island	Department of Highways	Front-end loader	—	RP = 1,584 yd.
(3) Saltspring Island—Rainbow Road		Front-end loader	1*	RP.
Coquitlam Municipality—				
(1) West end of Westwood Road	Corporation of the District of Coquitlam	Front-end loader, portable crushing, screening	1	RP and SA.
(2) Pipeline Road, 3½ miles north of Lougheed Highway	Jack Cewe Ltd., Box 1100, Coquitlam	Front-end loader, crushing, screening, paving plant	12	RP, SA, and AP.
(3) Pipeline Road, 3 miles north of Lougheed Highway	Jack Cewe Ltd., Box 1100, Coquitlam		—	RP.
(4) Pipeline Road, 3 miles north of Lougheed Highway	Columbia Bitulithic Ltd., Box 4225, Station D, Vancouver		—	RP.
(5) Pipeline Road, 3 miles north of Lougheed Highway	Allen Contracting Ltd., RR 1, Pipeline Rd., Port Coquitlam	Front-end loader, trucks, crushing, screening	5	RP and SA.
(6) Pipeline Road, 1½ miles north of Lougheed Highway	Allard Contractors Ltd., Box 47, Port Coquitlam	Front-end loader, crushing, screening	5	RP and SA.
(7) Pipeline Road, ½ mile north of Lougheed Highway	C & C Trucking Ltd., 858 Lougheed Hwy., Port Coquitlam	Front-end loader, trucks	5	RP.
(8) Pipeline Road, 4 miles north of Lougheed Highway	Allard Contractors Ltd., Box 47, Port Coquitlam	Shovel, trucks	2*	RP.
(9) Fraser River, at Mary Hill, 2 miles south of Port Coquitlam	Construction Aggregates Ltd., 850 South West Marine Dr., Vancouver	Front-end loader, shovels, trucks, processing plant, barge-loading facilities	60	WS, CA, and SA.
Annacis Island—Fraser River at Annacis Island	Willson Construction Co. Ltd., 4084 – 48th Ave., Ladner	Front-end loader	2	S.

**Part-time*

Sand and Gravel Pits—*Continued*

Location	Operator	Equipment	Men	Production
Maple Ridge Municipality—				
(1) 33rd Road, 1 mile south of Silver Valley	S. Berto, RR 2, Maple Ridge	Front-end loader, trucks	1*	RP.
(2) Grant Hill, 1 mile east of Albion and also adjoining Kirkpatrick pit	Corporation of the District of Maple Ridge	Front-end loader, crushing	—	RP and SA.
(3) Grant Hill, ¾ mile north of municipal pit	Williamson Blacktop and Landscaping Ltd., Haney	Front-end loader, crushing, screening	—	RP and SA.
(4) Grant Hill, ½ mile north of municipal pit	Allard Contractors Ltd., Box 47, Port Coquitlam	Front-end loader, crushing, washing, screening	2	WS.
(5) Lougheed Highway, south of Grant Hill	Walske Ready-Mix Ltd., 23616 River Rd., Haney	Front-end loader, shovel, crushing, washing, screening, ready-mix, mixer trucks	20	WS and RM.
(6) Albion	Columbia Bitulithic Ltd., Box 4225, Station D, Vancouver	Front-end loader, shovel, crushing, washing, screening, ready-mix, mixer trucks	20	WS and RM.
(7) Alouette River, east end of 72th Street	Kirkpatrick Sand & Gravel Ltd., 22357 McIntosh St., Haney	Front-end loader	2*	RP.
(8) One mile north of Websters Corners, ½ mile east	Kirkpatrick Sand & Gravel Ltd., 22357 McIntosh St., Haney	Shovel, washing, screening	2*	RP and WS.
(9) Maple Ridge, east of 284th Street	C. Cozens, Maple Ridge		—	RP.
(10)	Various operators, but owned by L. J. Donatelli, 29579 Lougheed Hwy., RR 2, Mission City	Front-end loaders, trucks	4*	RP.
Mission Municipality—				
(1) Two and one-third miles south of Steelhead, Dewdney Trunk Road	Cannon Contractors Ltd., Box 178, Mission	Front-end loader, crushing, screening	2*	RP and SA.
(2) Two and one-fifth miles south of Steelhead, Dewdney Trunk Road	M. Catherwood, RR 1, Mission		1*	RP.
(3) One mile east of Stave Falls powerhouse	Corporation of the District of Mission		—	S.
(4) Three miles east of Stave Falls powerhouse	Corporation of the District of Mission		—	RP.
(5) Two miles east of Ruskin powerhouse	Corporation of the District of Mission	Front-end loader	2	RP and SA.

Mission Municipality—Continued				
(6) Mission	Department of Highways	Front-end loader, screening	—	RP and SA.
Kent Municipality—				
(1) West of Cemetery Road, south of Mount Agassiz	Corporation of the District of Kent	Shovel	2	RP.
(2) McCallum Road, 1½ miles west of Harrison Hot Springs Road	Danielson Contracting Ltd., RR 1, McCallum Rd., Agassiz	Front-end loader	2*	RP.
(3) McCallum Road	Department of Highways	Front-end loader, screening	1	RP and SA.
(4) Fraser River bar, directly south of Agassiz	Morrow's Trucking & Reddi-Mix Ltd.	Front-end loader, trucks, screening	3	RP, SA, and RM = 7,000 yd.
(5) One mile north of Agassiz	Department of Highways	Front-end loader, trucks	2	RP.
(6) One-half mile south of Rosedale-Agassiz Bridge	Department of Highways	Front-end loader, trucks	2	RP.
(7) One-half mile west of Hunter Creek	Department of Highways	Front-end loader, trucks	2	RP.
Indian Reserve No. 1—Cheam View	Various operators	Front-end loader, trucks	2*	RP.
Chilliwack Municipality—				
(1) Arnold Road, bank of Fraser River	P. Heppner & Son Trucking Ltd., 7113 Sumas Prairie Rd., Sardis	Front-end loader	2*	RP.
(2) Fraser River bars, etc.	Chilliwack Gravel Sales Ltd.	Bucket-line dredge, front-end loader, screening plant	3	RP and WS.
Sumas Municipality—At foot and east of Taggart Peak	P. Heppner & Son Trucking Ltd., but owned by H. Quadling, RR 1, Yarrow	Front-end loader, screening	5*	RP and SA.
Matsqui Municipality—				
(1) One mile east of Abbotsford	Blackham's Construction Ltd., Box 39, Abbotsford	Front-end loaders, screening, washing,crushing	9	RP, SA, and WS = 141,765 yd.
(2) Trethewey Road, ¾ mile north of Clearbrook	Department of Highways	Front-end loaders, screening	4	RP and SA.
(3) Clearbrook Road, ½ mile north of border	Abbotsford Gravel Sales Ltd., Box 8, Abbotsford	Front-end loader, scraper, screening, washing, ready-mix plant of Totem Trucking Ltd.	3	WS, RP, and RM.
(4) 12th Avenue, ¼ mile west of Clearbrook Road	Valley Rite-mix Ltd., Box 430, Clearbrook	Front-end loader, scraper, screening, washing, crushing, ready-mix plant.	4	RP, SA, WS, and RM.

**Part-time*

Sand and Gravel Pits—*Continued*

Location	Operator	Equipment	Men	Production
Matsqui Municipality—Continued				
(5) Corner of LeFeuvre Road and Eighth Avenue, Caplette pit	Ernie's Trucking Ltd., Box 365, Aldergrove	Front-end loader	1	RP.
(6) LeFeuvre Road	Corporation of the District of Matsqui	Front-end loader, crushing, screening	—	RP and SA.
Langley Municipality—				
(1) Kinch Road, at 36th Avenue and Jackman Road	Corporation of the Township of Langley	Front-end loader, crushing, screening	4	RP and SA.
(2) North of the northeast corner of Jackman Road and Eighth Avenue	Aldergrove Cement Tile Products, 2437 – 272nd St., RR 1, Aldergrove	Front-end loader, screening	1*	RP, WS, and topsoil.
(3) Dogwood Avenue, off from Brown Road	Kitsul Bros. Gravel Sales Ltd., 24306 Fraser Hwy., RR 3, Langley	Front-end loader	2*	RP and S.
(4) 8802 Hudson Bay Road, Fort Langley	Clark Gravel & Ready Mix Ltd., Box 855, Langley	Front-end loader, crushing, screening, washing	3	RP, WS, and RM.
(5) 2962 Lambert Road, Highland pit	Construction Aggregates Ltd., 850 South West Marine Dr., Vancouver	Front-end loader, dragline, screening, washing, crushing	8	RP, WS, and SA.
(6) 32nd Avenue, at Kinch Road	Oscar Rees Gravel Sales Ltd., Box 847, Langley	Front-end loader, dragline, screening	5	RP and SA.
(7) Boundary Road, at Surrey boundary	Border Sand & Gravel Ltd., Boundary Ave., RR 2, White Rock	Front-end loader, crushing, screening	3	RP, SA, and WS = 61,237 yd.
(8) 10th Avenue and 146th Street	Lafarge Concrete Ltd., 1051 Main St., Vancouver	Front-end loaders, crushing, screening	12	RP, WS, and SA.
Surrey Municipality—				
(1) Campbell River Road, at Langley boundary	White Rock Sand & Gravel Ltd., 2546 – 176th St., RR 2, Cloverdale	Front-end loader, shovel, screening, washing	3	RP, SA, and WS.
(2) 24th Avenue, at Langley boundary	Corporation of the District of Surrey	Front-end loader	—	RP and SA.
(3) 160th Street, south of 24th Avenue	Corporation of the District of Surrey	Front-end loader	—	RP.
(4) 53rd Avenue, at Delta boundary	Corporation of the District of Surrey	Front-end loader	—	RP.
(5) 28th Avenue, at 194th Street	Corporation of the District of Surrey	Front-end loader	—	RP.
(6) 96th Avenue, at Langley boundary	Corporation of the District of Surrey	Front-end loader	—	RP and SA.
Delta Municipality—				
(1) One-half mile west of Scott Road, at 68th Street	Standard-General Construction (International) Ltd., 6631 – 120th St., North Surrey	Front-end loaders, crushing, screening, washing	2	RP, WS, and SA.

Delta Municipality—Continued				
(2) 10720 – 84th Avenue	M. & W. Sand & Gravel Ltd., 948 Beckwith Rd., Richmond	Front-end loader	–	RP.
(3) Fraser River, at Annieville	Sabre Bulldozing Ltd., 719 No. 3 Rd., Richmond	Front-end loader	2	S.
Fort St. John Highways District—				
Fort St. John Area				
(1) Imperial pit	Department of Highways	Loader, dump trucks	4	CA = 7,586 yd.
(2) Foster pit	Department of Highways	Loader, dump trucks	3	RP = 2,500 yd.
(3) Jardine pit	Department of Highways	Loader, dump trucks	3	RP = 1,400 yd.
(4) Moore pit	Department of Highways	Loader, dump trucks	4	RP = 5,035 yd.
(5) Wilde pit	Department of Highways	Loader, dump trucks	4	RP = 3,500 yd.
(6) Beatton River	Department of Highways	Loader, dump trucks	4	RP = 8,210 yd.
(7) Pink Mountain pit	Department of Highways	Loader, cat, trucks	5	S = 3,500 yd.(sandstone).
(8) MacLean pit	Department of Highways	Loader, trucks	4	RP = 3,140 yd.
(9) Inga Lake	Department of Highways	Loader, trucks	5	RP = 5,100 yd.
(10) 23 Mile pit, on Road 151	Department of Highways	Loader, cat, trucks	5	S = 1,800 yd.(sandstone).
(11) Triad pit	Department of Highways	Loader, trucks	6	RP = 8,400 yd.
(12) Doig pit	Department of Highways	Loader, trucks	4	RP = 1,400 yd.
(13) Moose Mouth pit	Department of Highways	Loader, trucks	15	CA = 28,000 yd.
(14) Watson pit	Department of Highways	Loader, trucks	6	RP = 8,400 yd.
(15) Clark pit	Department of Highways	Loader, trucks	4	S = 5,000 yd., RP = 2,520 yd.
(16) Montney Quarry	Department of Highways	Loader, cat, trucks	6	S = 6,800 yd.(sandstone).
(17) Bremner Quarry	Department of Highways	Loader, cat trucks	6	S = 9,100 yd.(sandstone).
(18) Beatton River area	Texaco Exploration Canada Ltd.	Loader, trucks	5	RP = 13,347 yd.
(19) Imperial pit	Swanberg Bros. Trucking Ltd.	Loader, trucks	4	RP = 900 yd.
Fort Nelson Area				
(1) Mile 295 pit	Department of Highways	Loader, trucks	3	RP = 3,000 yd., S = 1,500 yd.
(2) Mile 295 pit	H. Gagne	Loader, cat, trucks	3	RP = 1,300 yd.
(3) Mile 235 pit	Westcoast Transmission Co. Ltd.	Loader, trucks	5	RP = 2,496 yd.
(4) Mile 295 pit	Keen Industries Ltd.	Loader, trucks	5	RP = 1,502 yd.
Atlin North Area				
(1) Blue River	Department of Highways	Loader, trucks	10	CA = 25,000 yd.

*Part-time

Sand and Gravel Pits—*Continued*

Location	Operator	Equipment	Men	Production
Atlin North Area—Continued				
(2) Dease pit	Department of Highways	Loader, trucks	10	CA = 20,000 yd.
(3) Mile 48 pit	Department of Highways	Loader, trucks	4	CA = 5,000 yd.
(4) Camp pit	Department of Highways	Loader, trucks	12	CA = 40,000 yd.
(5) Deep Creek	Department of Highways	Loader, trucks	8	CA = 10,000 yd.
(6) Laketon pit	Department of Highways	Loader, trucks	10	CA = 20,000 yd.
(7) Hotel Creek	Department of Highways	Loader, trucks	4	CA = 5,000 yd.
(8) Callison pit	Department of Highways	Loader, trucks	10	CA = 20,000 yd.
(9) Rescue pit	Department of Highways	Loader, trucks	10	CA = 25,000 yd.
(10) Durham pit	Department of Highways	Loader, trucks	10	CA = 20,000 yd.
(11) Devil Creek	Department of Highways	Loader, trucks	10	CA = 20,000 yd.
(12) Ogilvie pit	Department of Highways	Loader, trucks	10	CA = 20,000 yd.
(13) Bell Irving No. 2	Department of Highways	Loader, trucks	10	CA = 10,000 yd.
(14) Mile 10, Telegraph Creek Road	Department of Highways	Loader, trucks	20	CA = 50,000 yd.
Terrace Highways District—				
(1) Mile 1, Old Lakelse Lake Road	Department of Highways	Loader, trucks	9	S = 5,000 yd., RP = 3,000 yd.
(2) Mile 6.5, Highway 25	Department of Highways	Loader, trucks	2	RP = 500 yd.
(3) Mile 2.6, Highway 16E	Department of Highways	Loader, trucks	3	CA = 4,000 yd.
(4) Junction of Queensway and Old Remo Road	Department of Highways	Loader, trucks	3	RP = 2,000 yd.
(5) Mile 4, Kalum Lake Road	Department of Highways	Loader, trucks	2	RP = 1,000 yd.
(6) Mile 11.5, Highway 25	Department of Highways	Loader, trucks	3	CA = 1,200 yd.
(7) Mile 4, Highway 16E	Department of Highways	Loader, trucks	2	RP = 500 yd.
(8) Mile 2.3, Beam Station Road	Department of Highways	Loader, trucks	3	RP = 1,000 yd.
(9) Mile 1.9, Kitimat Village Road	Department of Highways	Loader, trucks	5	RP = 6,500 yd.
(10) Mile 8, Highway 16E	Department of Highways	Loader, trucks	3	RP = 2,000 yd.
(11) Mile 21, Highway 16E	Department of Highways	Loader, trucks	3	RP = 1,000 yd.
(12) Mile 23.7, Highway 16E	Department of Highways	Loader, trucks	3	RP = 2,000 yd.
(13) Mile 42, Highway 16W	Department of Highways	Loader, crusher	5	CA = 10,000 yd.
(14) Mile 4, Highway 25	Department of Highways	Loader, trucks	3	RP = 600 yd.
(15) Mile 1, Crescent Drive	Department of Highways	Loader, trucks	2	RP = 500 yd.
(16) Mile 3.2, Kalum Lake Road	Department of Highways	Loader, trucks, dozer	3	RP = 2,000 yd.
(17) Mile 28.5, Highway 16W	Department of Highways	Loader, trucks	2	CA = 500 yd.
(18) Rosswood	Department of Highways	Loader, trucks	3	RP = 1,500 yd.

Terrace Highways District—Continued				
(19) Rosswood	Department of Highways	Loader, trucks	4	RP = 3,000 yd.
(20) Mile 1.2, Kalum Lake Road	Department of Highways	Loader, trucks	2	RP = 1,000 yd.
(21) Highway 25	Department of Highways	Loader, trucks	3	S = 2,500 yd.
(22) Highway 25	Department of Highways	Loader, trucks	4	CA = 3000
(23) Mile 26, Highway 16W	Department of Highways	Loader, trucks, dozer	12	RP = 330,000 yd., R = 6,500 yd.
(24) Mile 22.5, Highway 16W	Department of Highways	Loader, trucks, dozer	12	RP = 108,382 yd.
Prince Rupert Highways District—				
Stewart Meziadin Area				
(1) Nass Road, Meziadin Lake pit	Department of Highways	Loader, trucks	10	RP = 1,000 yd.
(2) Cousins Creek pit	Department of Highways	Loader, trucks	10	RP = 45,000 yd.
(3) American Creek pit	Department of Highways	Loader, trucks	10	RP = 70,000 yd.
Prince Rupert Area—Green River pit	Department of Highways	Loader, trucks	3	RP = 1,600 yd.
Queen Charlotte Area				
(1) St. Mary's Springs Quarry	Department of Highways	Loader, trucks	3	RP - 225 u
(2) Construction pit	Department of Highways	Loader, trucks	3	RP = 300 yd.
Commercial Pits				
(1) Foreshore Lease, Metlakatla Bar	Rivtow Straits Ltd.	Tug, derrick, scow	4	RP = 21,921 tons.
(2) Foreshore Lease, Metlakatla Bar	Rivtow Straits Ltd.	Tug, derrick, scow	4	RP = 21,921 tons.
(3) Foreshore Lease, Metlakatla Bar	Rivtow Straits Ltd.	Tug, derrick, scow	4	RP = 21,921 tons.
(4) Foreshore Lease, Silver Creek	Rivtow Straits Ltd.	Tug, derrick, scow	4	S = 17,198 tons.
(5) Foreshore Lease, Hastings Arm	Rivtow Straits Ltd.	Tug, derrick, scow	8	RP = 1,525 tons.
(6) Foreshore Lease, Hastings Arm	Rivtow Straits Ltd.	Tug, derrick, scow	8	RP = 1,525 tons.
(7) Foreshore Lease, Welcome Harbour	Rivtow Srraits Ltd.	Tug, derrick, scow	4	RP = 23,748 tons.
(8) Foreshore Lease, Secret Cove	Rivtow Straits Ltd.	Tug, derrick, scow	4	RP = 10,000 tons.
(9) Foreshore Lease, Pearse Island	Rupert Cement Products (1965) Ltd.	Tug, derrick, scow	8	RP = 1,499 tons.
(10) Foreshore Lease, Pearse Island	Rupert Cement Products (1965) Ltd.	Tug, derrick, scow	8	RP = 1,499 tons.
(11) Foreshore Lease, Useless Bay	Rivtow Straits Ltd.	Tug, derrick, scow	4	RP = 8,087 tons.
(12) Foreshore Lease, Tuck Inlet	Rivtow Stratts Ltd.	Tug, derrick, scow	4	RP = 1,483 tons.
(13) Porcher Island	Rupert Cement Products (1965) Ltd.	Tug, derrick, scow	4	Nil.
(14) Griffith Road, Terrace	Vic Froese Trucking Ltd.	Loader	1	RP = 20,000 yd.
(15) Sandhill, Kitimat	Ocean Construction Supplies, Northern Ltd., Kitimat	Dragline	2	RP, CA.

*Part-time

Sand and Gravel Pits—*Continued*

Location	Operator	Equipment	Men	Production
Commercial Pits—Continued				
(16) Deep Creek pit, Kalum Lake Road	Chickiman Developments Ltd.	Loader, truck	4	RP.
(17) Griffith Road, Terrace	Farko Contracting Ltd.	Loader, dump trucks	2	RP = 22,500 yd.
(18) Barnachez Creek pit, Stewart	Stewart-Northern Materials Ltd.	Loader, dump truck, cat	3	RP = 2,876 yd.
(19) Sandhill, Kitimat	L. G. Scott & Sons Construction Ltd.	Loader, cat, crusher	7	CA = 85,000 tons.
(20) L. H. & K. pit, Terrace	L. G. Scott & Sons Construction Ltd.	Loader, cat, crusher	6	CA = 40,000 tons.
(21) No. 260 pit, Highway 16E	L. G. Scott & Sons Construction Ltd.	Loader, cat, crusher	6	CA = 245,000 tons.
(22) Tatlow Road pit, Smithers	L. G. Scott & Sons Construction Ltd.	Loader, crusher	4	CA = 75,000 tons.
(23) Was Wash pit, Kemano	L. G. Scott & Sons Construction Ltd.	Loader, crusher	4	CA = 100,000 tons.
(24) Logging road off Northwood, Houston	L. G. Scott & Sons Construction Ltd.	Loader, screener	2	RP = 75,000 tons.

**Part-time*

SILICA

SUSIE (Fig. J, No. 39)

LOCATION: Lat. 49° 13′ Long. 119° 36′ (82E/4E)
Report on this property under metals in section 82E/4E.

LOUMARK (Fig. J, No. 40)

LOCATION: Lat. 49° 58′ Long. 118° 40′ (82E/15E)
Report on this property under metals in section 82E/15E.

KALISPELL (Fig. J, No. 41)

LOCATION: Lat. 49° 52′ Long. 117° 25′ (82F/14W)
Report on this property under metals in section 82F/14W.

HUNT (Fig. J, No. 42)

LOCATION: Lat. 51° 12.6′ Long. 116° 51.8′ (82N/2W)
GOLDEN M.D. NE¼ Section 9, Township 26, Range 21 W5M, 12.9 kilometres south of Golden, at approximately 762 metres elevation.
CLAIMS: HUNT 1A to 9A.
OWNER: C. W. HUNT, 1119 Sydenham Road SW., Calgary, Alta. T2T 0T5.
DESCRIPTION: Massive quartzite of the Mount Wilson Formation.
WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims; topographic mapping, 1 inch equals 200 feet with 25-foot contours.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 565; Assessment Report 5235.

SCUZZY CREEK (Fig. J, No. 43)

LOCATION: Lat. 49° 50′ Long. 121° 35′ (92H/13E)
NEW WESTMINSTER M.D. Along Scuzzy Creek, 19.2 kilometres to 27.2 kilometres by logging road southwest of North Bend, between 790 and 1,000 metres elevation.
CLAIMS: APLO 1 and 2, LYN 1 to 5, MIN 1, MIDGE 1, 3, 4, 10 to 20, 23, 24, NAN 1 to 8.
OWNER: INDUSMIN LIMITED, Box 40, Commerce Court West, Toronto, Ont. M5L 1B4.
WORK DONE: Rotary drilling, part of one hole totalling 4.8 metres on Midge 16; percussion drilling, seven holes totalling 128 metres on Midge 14, 16, 18, Lyn 1, and Nan 1, 5; road construction, 0.06 kilometre on Midge 13 (to possible drill site).
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 617.

BUSE LAKE QUARRY (Fig. J, No. 44)

By E. Sadar

LOCATION: Lat. 50° 37.3′ Long. 120° 01.5′ (92I/5E)
KAMLOOPS M.D. At the southeast corner of Buse Lake, 22.5 kilometres east-southeast of Kamloops.
CLAIMS: BUSE LAKE 1 and 2.
OWNER: Canada Cement Lafarge Ltd.
OPERATOR: PLATEAU CONSTRUCTION LIMITED, Kamloops.
WORK DONE: Shipped to cement plant, 25,650 tonnes.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 565.

SIC (Fig. J, No. 45)

LOCATION: Lat. 50° 07′ Long. 127° 17.5′ (92L/3W)
ALBERNI M.D. Between Jansen Lake and Easy Inlet, at 30 to 60 metres elevation.
CLAIMS: SIC 1 to 5 and 7.
OWNER: SICAMOUS RESOURCES LTD., 307, 475 Howe Street, Vancouver V6C 2B3.
DESCRIPTION: Lower and Middle Triassic Karmutsen basalt is overlain by Upper Triassic andesite, which toward the northeastern part of Easy Inlet cuts both Karmutsen basalt and somewhat older Upper Triassic limestone. Both andesite and limestone (marble) may be in part Lower Jurassic. Zones have been altered to various mixtures of quartz-sericite, quartz-pyrophyllite, and quartz-alunite.
WORK DONE: Surface geological mapping, 1 inch equals 600 feet covering all claims.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 552 (Morris, Monteith).

QUARTZ (Fig. J, No. 46)

LOCATION: Lat. 53° 22′ Long. 122° 26′ (93G/8W)
CARIBOO M.D. Ten kilometres northeast of Strathnaver, 3.2 kilometres north-northwest of Yardley Lake.
CLAIMS: QUARTZ 1 and 2.
OWNER: THOMAS MOODY DUNLOP, 1179 Moffat Avenue, Quesnel.
DESCRIPTION: Massive quartz vein.
WORK DONE: Stripping and mapping exposures of a quartz vein at a scale of 1 inch equals 100 feet.
REFERENCE: Assessment Report 5141.

AN (Fig. J, No. 47)

LOCATION: Lat. 55° 05′ Long. 122° 08.1′ (93O/1E)
CARIBOO M.D. At the head of North Anzac River, 3.2 kilometres southeast of Mount Kinney, at approximately 1,370 metres elevation.
CLAIMS: AN 1 to 6.
OWNER: Silver Standard Mines Limited.

OPERATOR: COASTAL MINING COMPANY, 1200 West Pender Street, Vancouver V6E 2S9.
WORK DONE: Surface diamond drilling, one BQ hole totalling 33 metres on An 5.
REFERENCE: Assessment Report 5178.

WIN (Fig. J, No. 48)

LOCATION: Lat. 55° 02' Long. 122° 54' (93O/2W)
CARIBOO M.D. North and adjacent to Mount Chingee fire tower and approximately 35 kilometres south-southeast of MacKenzie, at 1,266 metres elevation.
CLAIMS: WIN 1 to 10.
OWNER: Silver Standard Mines Limited.
OPERATOR: COASTAL MINING COMPANY, 1200 West Pender Street, Vancouver V6E 2S9.
WORK DONE: Surface diamond drilling, six BQ holes totalling 384 metres on Win 1, 2, 3, and 4.
REFERENCE: Assessment Report 5025.

TALC

J&J (Fig. J, No. 49)

By J. W. McCammon

LOCATION: Lat. 50° 00.1' Long. 121° 34.6' (92I/4E)
NEW WESTMINSTER M.D. Between 227 and 308 metres elevation on the south bank of Nahatlatch River, 4.3 kilometres due west of Fraser River and 16 kilometres northwest of North Bend.
CLAIMS: J&J 1 to 10.
OWNER: PACIFIC TALC LTD., 7765 Lee Street, Burnaby.
DESCRIPTION:

This property covers a talc deposit discovered by John Massey who recorded the J&J 1 and 2 claims in March 1970. Subsequently John Greenlees recorded the J&J 3 and 4 claims in April 1970 and the J&J 5 to 10 claims in July 1971. All ten claims were sold to Pacific Talc Ltd. in June 1972.

The talc is associated with phyllite, the age of which is shown on Geological Survey of Canada Map 1010A as Triassic or earlier and on Map 737A as Carboniferous and later.

Talcose rock is exposed just east of a small creek, down the wooded, steep, bluffy northwest end of a low hill. Outcrops are scarce. The talc appears to form a band 35 to 45 metres wide. It can be seen in discontinuous showings from the road at 227 metres elevation southeasterly for 190 metres to a trench at 308 metres elevation. None was seen between the road and Nahatlatch River at 205 metres elevation 100 metres to the north, nor in the drift-covered area within a 150-metre diameter semicircle south of the top trench.

The talc rock consists essentially of talc and carbonate (mostly magnesite, some dolomite) with lesser chlorite, limonite, magnetite, and pyrite. It varies from light to dark greyish green speckled with buff and weathers buff to brown stained. Shearing has made the rock schisted and platy. Composition and texture vary considerably and rapidly from place to place. Massive dark rock composed of chlorite is visible between the east edge of the talc and phyllite about half way up the slope. Similar chloritic rock is exposed in a lens in the western part of the main quarry face and along the west edge of the talc in the cut on the main road. No contact of the talc with wallrock was seen. The nearest outcrops on either side of the talc-chlorite band consist of dark slaty phyllite. Foliation in this rock strikes northwest and dips vertically to steeply east. Minor folds and crenulations are abundant.

In thin sections talc appears to have replaced chlorite and carbonate occurs as coarse unoriented grains and masses. This would suggest that the talc and carbonate formed after chlorite by alteration from an original ultrabasic rock. Map 1010A shows a large serpentinized ultrabasic mass about 3.2 kilometres on strike northwest of the J&J showings.

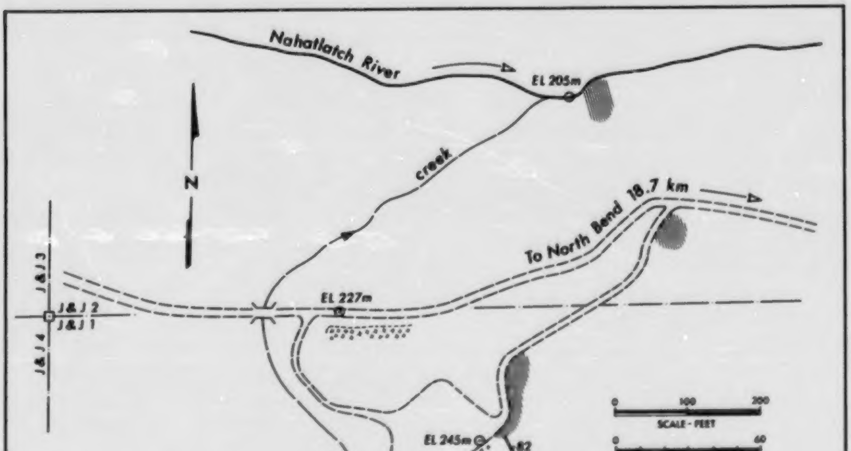
Nahatlatch River
EL 205m
N
creek
To North Bend 18.7 km
J&J 3
J&J 2
J&J 1
J&J 4
EL 227m
EL 245m
82
EL 308m
84
0 100 200
SCALE - FEET
0 60
SCALE - METRES
TALC
PHYLLITE

Figure 37. Sketch map, J&J talc property.

A sample consisting of small equal-sized chips taken at 30-centimetre intervals was collected across a 36-metre width of talc freshly exposed in the face of the main quarry. Chemical analysis of this sample showed the following percentage composition: MgO = 35.1, SiO_2 = 37.5, H_2O+ (900° C) = 4.26, CO_2 = 17.0, Fe_2O_3 = 6.75, Al_2O_3 = 1.29, CaO = 0.62. This would indicate a talc content of slightly over 50 per cent for this particular sample. Company figures indicate talc contents of samples ranging from 30 to 50 per cent.

WORK DONE: Open-cuts and trenches present on the property at the end of August 1974 were as shown on Figure 37.

H (Fig. J, No. 50)

LOCATION: Lat. 50° 04.5′ Long. 121° 38′ (92I/4E)
KAMLOOPS and NEW WESTMINSTER M.D. Twenty-two kilometres northwest of Boston Bar along a ridge separating Long Creek from Fraser River, 5 kilometres southeast of Pyramid Mountain.

CLAIMS: H 1 to 24, TM 1 to 4, G 1 to 3.

OWNER: NAHATLATCH RESOURCES LTD., 210, 890 West Pender Street, Vancouver.

WORK DONE: Bulk sampling of talc zone, 22 samples taken on reconnaissance grid covering G 1-2, H 7, 9, 11-12, 14; linecutting and magnetometer grid covering G 1-2 and H 7, 9, 11-12, 14; linecutting and magnetometer survey, 7.2 line-miles covering G 1-3 and H 5, 7, 9, 11, 12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 166; Assessment Reports 4508, 4985, 5111.

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COAL

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GENERAL REVIEW OF COAL MINING AND EXPLORATION

By R. D. Gilchrist

INTRODUCTION

The principal coal resources of the Province occur in comparatively narrow linear belts within the intermontane basins of the East Kootenay area and the inner foothills region of northeastern British Columbia. These deposits of Late Jurassic to Early Cretaceous age contain major reserves of medium to low-volatile bituminous coal, generally suitable for the production of metallurgical coke. Several other coal-bearing areas are scattered throughout the Province and contain coal suitable for thermal purposes only. Although many of these have been mined in the past, only one of these, Hat Creek, is known today to have a measured mineable reserve of significant quantity.

In 1974 the two major coal mines in the Province, Kaiser Resources Ltd. and Fording Coal Limited, produced a combined total of about 11.2 million tons of raw coal, mostly from surface operations. Eight and one-half million tons of clean product coal yielded a mine value of $155 million. Ninety-two per cent of the total output was exported to Japan.

Total coal exploration expenditure increased during 1974 as both existing producers and those considering the opening of mines continued to develop reserves.

A new *Coal Act* was assented to in June of 1974 and came into force on August 1. This act repealed the *Coal Act* (1960), but all holders of licences in good standing had the privilege of applying within 90 days for licences under the new act. All licences issued under the new *Coal Act* are for exploration and development. Production of coal requires a lease or a limited production permit (100 tons per day). Annual work requirements are $3.00, $4.00, or $5.00 per acre or fraction thereof. Where work is not performed during a term, the equivalent cash payment in lieu of work is required. Provision was made in the *Coal Act* (1974) for regulations to be passed by Order-in-Council.

As of December 31, 1974, 1,226 licences covering 690,567 acres were held.

GEOLOGY AND MINING

Coal deposits of the Kootenay Formation in the Crowsnest Pass area and in the Gething and Commotion Formations of northeastern British Columbia occur in structurally complex foothills and mountainous terrain. Distribution and extent of the main stratigraphic units are controlled by extensive regional faults and *en echelon* folds, resulting in comparatively narrow elongated belts in which coal-bearing strata have been exposed and segregated by erosion in moderate to high-relief terrain. Varying depositional patterns, resulting from coal accumulation in prograding deltaic and alluvial plain environments affect seam continuity, extent, and thickness in both a regional and local context. There is a broad spectrum of combined structural and stratigraphic effects, ranging from mildly flexed strata of relatively uniform characteristics to the steeply inclined, highly deformed, crushed, and friable deposits which are typical of the 'mountain' coals. Coking properties of the coal may be relatively constant, or may vary somewhat in response to composition. Commonly, FSI values are low where the seam is exposed in outcrop, and coking properties may be destroyed in the more structurally deformed deposits through deep oxidation by circulating ground waters.

The Kootenay coal measures which underlie the Fernie and Elk River basins contain 10 or more mineable seams, with an aggregate thickness in excess of 150 feet. Of these, the Balmer and correlative seams which occur at the base of the sequence may be up to 50 feet thick, and this factor, together with favourable strip-ratios in the currently developed mine areas, accounts for most of the reserves defined to date. The Kootenay coals generally exhibit good coking characteristics and are low in sulphur.

Regional potential of the Gething and Commotion Formations is less well defined. However, a combined total of at least seven mineable seams of medium and low-volatile bituminous coking coal has been identified along much of the foothills belt southeastward from Peace River to the Alberta border. Prospective mine areas which have been most thoroughly investigated are situated within broadly synclinal, structurally less-deformed blocks which appear amenable to underground mining. Other areas which appear to offer attractive open-pit potential are situated along thickened fold limbs.

The intensively mechanized, high-capacity surface-mining operations developed in the East Kootenays emphasize the importance of accurate pre-production assessment of structural, stratigraphic, and quality control aspects of reserve evaluation. These factors, together with intensive mine planning and systems and plant design, are essential in meeting throughput and coal specification requirements of a successful metallurgical coal operation. Continued success of hydraulic mining systems by Kaiser Resources Ltd. holds promise for future underground development of thick steeply inclined seams.

Local deposits of lignite, sub-bituminous, high-volatile bituminous, and semi-anthracite coals, of Upper Cretaceous and Tertiary age, occur in widely scattered areas of British Columbia. Size and economic potential of most of these, including possible reserves in the former coal-mining areas of Vancouver Island, are comparatively small, although they are of potential value for base-load power development as energy costs continue to increase. An exception to the foregoing is the Hat Creek property which is a Tertiary lignite of limited areal extent but of considerable thickness. Limited overburden renders it amenable to open-pit mining.

RESERVES

New reserve and resource tonnage figures have been compiled for 1974 using somewhat more conservative areas of influence parameters than had been used in previous reporting. These new parameters are contained within the Department of Energy, Mines and Resources interim document, January 30, 1975. The data base for reserve and resource calculations has been provided primarily by companies engaged in exploration for coal. The bulk of the reserves and resources are of metallurgical coal because the major coal-bearing formations in the Province contain for the most part only bituminous potential coking coal and because exploration has been market and price oriented, that is, metallurgical coal.

The geological *in situ* measured reserves of metallurgical coal as of December 31, 1974 were 1,843 million short tons. Of this 1,140 million tons was considered to be recoverable from the ground and from this only 752 million tons can be produced from the preparation plant as clean product coal. Indicated resources of 8,858 million tons and inferred resources of 20,271 million tons were tabulated for metallurgical coal. Slightly more than one-third of the measured reserves of metallurgical coal are considered mineable by surface methods and nearly all of these are in the Crowsnest coalfield. The major portion of the underground measured reserves are in the Peace River coalfield.

Geological *in situ* measured reserves of thermal coal were 516 million tons, with 391 million tons of this considered recoverable. Almost all of this is in British Columbia Hydro and Power Authority's Hat Creek deposit, and owing to the unique and geologically unpredictable nature of the deposit only minor quantities of 131 and 113 million tons have been assigned to the categories of indicated and inferred resources respectively.

DEVELOPMENT AND EXPLORATION

A variety of factors including record production of coal combined to make 1974 the best year for Kaiser Resources Ltd.'s mining operations at Sparwood.

During 1974 a considerable amount of new equity was brought into Kaiser Resources Ltd. under a financial restructuring programme in which the Mitsubishi Corporation of Tokyo bought 7,236,000 shares of the company for $27.5 million and Kaiser Steel Corporation invested a like amount. Almost all of the monies from Mitsubishi were used to help reduce the company's outstanding debt to $28.7 million as of December 31, 1974, compared to $57.4 million at the end of 1973, and a peak of $109 million in 1972.

A number of price adjustments were made during the year reflecting a world-wide trend. Kaiser's contract price with the Japanese went from $21.63 per long ton in March to $36.69 per long ton in December. As well, an adjustment of contract specifications of moisture content from 6 to 8 per cent was made.

Kaiser's 1974 consolidated net earnings were up to $24,158,000 as compared to $3,478,000 in 1973. The increase was attributed to higher prices, lower interest costs, and record production and shipping levels.

Although the bulk of Kaiser's production was shipped to Japan, small shipments of coking coal to Eastern Canada and thermal coal to Europe and Ontario Hydro were made in 1974.

In July, Kaiser Resources Ltd. with Mitsui Mining Company, Limited and Mitsubishi Corporation as partners formed a new company, Kaiser Coal Canada Ltd. to conduct a joint exploration and feasibility study on their Hosmer-Wheeler property considering hydraulic mining as the extraction method.

Fording Coal Limited's 1974 production of approximately 2 million long tons of clean coal was down slightly from 1973's production of 2.2 million long tons. The decrease was attributed to a two-month strike earlier in the year. Fording's contract is for 3 million long tons per year. During 1974 Fording began investigations for an underground hydraulic mine under Eagle Mountain. In December a contract was signed with Kaiser Resources Ltd. under which hydraulic coal mining technology will be provided to

COAL PRODUCTION AND DISTRIBUTION BY COLLIERIES, 1974

(adapted and modified from Table 88, Annual Report of the Minister of Mines and Petroleum Resources)

	Raw Coal Production			Clean Coal Production		Coal Used		Coal Sales							Total Coal – Sold and Used		
								Canada									
	Surface	Underground	Total			Plant Use & Misc.	Coke Making	B.C.	Other Provinces	Total	U.S.	Japan	Others	Total	Amount	Total Value	Average Value
	Tons	Tons	Tons	Tons	%	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	$	$/Ton
Southeastern British Columbia																	
Byron Creek Collieries Limited, thermal	219,186	—	219,186	208,670	95.2	—	—	—	49,356	49,356	—	—	128,108	177,464	177,464	2,579,456	14.54
Coleman Collieries Ltd., metallurgical	154,235	—	154,235	107 965	70.0	—	—	—	—	—	—	68,373	38,592	107,965	107,965	3,056,380	28.31
Fording Coal Limited, metallurgical	3,105,356	—	3,105,356	2,115,819	68.1	—	—	—	15,253	15,253	—	2,226,531	—	2,241,784	2,241,784	48,718,774	21.73
Kaiser Resources Ltd., metallurgical	6,247,379	968,932	7,216,311	5,639,061	78.1	—	—	—	—	—	—	—	—	—	—	—	—
thermal	492,329	14,141	506,470	460,426	90.9	—	—	—	—	—	—	—	—	—	—	—	—
Total	6,739,708	983,073	7,772,781	6,099,487	80.0	4,156	233,546	46,771	83,040	129,811	10,514	5,335,755	292,086	5,768,166	6,005,868	98,925,361	16.84
Northern British Columbia																	
Coalition Mining Limited, metallurgical	—	—	—	—	—	—	—	—	—	—	—	—	17,700	17,700	17,700	309,000	17.46
Bulkley Valley Colliery Ltd., thermal	—	433	433	378	87.3	5	—	373	—	373	—	—	—	373	378	4,682	12.39
TOTALS																	
Metallurgical	9,506,970	968,932	10,475,902	7,862,845	75.1	—	—	—	—	—	—	—	—	—	—	—	—
Per Cent of 1974 Totals	90.8	9.2	100.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Thermal	711,515	14,574	726,089	669,474	92.2	—	—	—	—	—	—	—	—	—	—	—	—
Per Cent of 1974 Totals	98.0	2.0	100.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL, 1974	10,218,485	983,506	11,201,991	8,532,319	76.2	4,161	233,546	47,144	147,649	194,793	10,514	7,630,659	477,486	8,313,452	8,551,159	154,593,643	18.08
% of 1974 Raw Coal Produced	91.2	8.8	100.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% of 1974 Coal Sales	—	—	—	—	—	—	—	0.6	1.8	2.3	0.1	91.8	5.7	—	—	—	—
% of 1974 Canadian Coal Sales	—	—	—	—	—	—	—	24.2	75.8	100.0	—	—	—	—	—	—	—
% of 1974 Total Coal Sold and Used	—	—	—	—	—	0.0	2.7	—	—	—	—	—	—	97.2	100.0	—	—
TOTALS, 1973	9,659,369	1,235,570	10,894,939	7,772,338	71.3	4,200	247,542	—	—	74,958	—	7,306,327	—	7,381,509	7,633,251	87,976,105	11.53
Change 1974/1973	+559,116	−252,064	+307,052	+759,981	+4.9	−39	−13,996	—	—	+119,835	—	+324,332	—	+931,943	+917,908	+66,617,538	+6.55
Per cent Change 1974/1973	+5.8	−20.4	+2.8	+9.8	+6.9	−0.9	−5.7	—	—	+159.9	—	+4.4	—	+12.6	+12.0	+75.7	+56.8

Fording in exchange for 30 cents for each clean long ton of coal produced from the mine up to a maximum of $1.6 million.

Byron Creek Collieries Ltd. began production in 1974 at their mine at Corbin. Approximately 200,000 tons of oxidized bituminous coal was mined from a surface operation and shipped via truck and rail to Ontario Hydro.

During 1974 exploration continued on a number of coking coal properties in the Crowsnest and Peace River coalfields including the Kaiser, Fording, Sage Creek, Denison, and Coalition properties. However a number of other properties including Crowsnest Industries' Line Creek, Scurry Rainbow-Emkay's Elk River, and Utah's Carbon Creek deposits which have undergone considerable exploration were inactive in 1974 while development, financing, and many other considerations were examined. Coalition's Sukunka mine did not go ahead as originally planned in 1974 due to financing problems. The provincial government through British Columbia Rail dropped its option to take a 40-per-cent share in the project.

British Columbia Hydro and Power Authority conducted a small exploration programme at Suquash on Vancouver Island and a large programme at Hat Creek with the aim of developing reserves of coal sufficient to fuel a large thermal power plant.

PRODUCTION

Production statistics, modified to indicate average and percentage comparisons are shown in the accompanying table. Several of the more significant factors are as follows:

1. Ninety-one per cent of raw coal production was derived from surface mining operations, with the balance of 9 per cent from underground mines.
2. Clean coal output, which totalled 8.53 million short tons, averaged 76 per cent of total raw coal mined. This average recovery compares closely with that for 1973 (71 per cent), but differs in detail.
3. Increased minehead value for 1974 coal sales ($154.59 million) resulting principally from increased product value gave an average value increase of about 6.6 per cent.
4. About 92 per cent of total coal product output was exported to Japan. Domestic coke production, which accounted for some 2.7 per cent of output, represented the second largest market.
5. Of the five coal-mining operations active during 1974, two companies (Kaiser Resources Ltd. and Fording Coal Limited) accounted for 96 per cent of the output.

REPORTS ON COAL MINES

EAST KOOTENAY INSPECTION DISTRICT

By R. W. Lewis and R. D. Gilchrist

Total coal production from the East Kootenay District during 1974 was 8,531,941 short tons of clean coal, an increase of 759,871 tons over the previous year. Kaiser Resources Ltd. and Fording Coal Limited produced 6,099,487 tons and 2,115,819 tons of clean coal respectively. The open-pit operation of Byron Creek Collieries Limited at Coal Mountain, Corbin, came into operation in the latter half of the year, and this company had produced 208,670 tons by year-end. Coleman Collieries Limited produced 154,235 tons of coal from the British Columbia side of the Interprovincial boundary at their Tent Mountain open-pit operation. During the year several outlets were established for thermal coal produced in the district, with contract commitments made to both Eastern Canada and to some Western European countries. During 1974, 669,096 tons of product coal was supplied to this thermal coal market from two of the mining companies in the East Kootenay District.

A considerable amount of coal exploration work was performed in the district during 1974. Major programmes were conducted by Kaiser Resources Ltd., Fording Coal Limited, and Rio Tinto Canadian Exploration Limited. Kaiser Resources Ltd. embarked upon an extensive rotary drilling programme in the Hosmer-Wheeler Ridge area and by the year-end there were significant indications that the company was seriously considering the development of a new large underground hydraulic mine in the No. 3 and No. 4 seams in this area. Rio Tinto Canadian Exploration Limited completed a substantial programme of underground sampling and drilling at the Sage Creek Coal property during the year. Fording Coal Limited performed a considerable amount of exploration work during 1974 in preparation for the development of the new underground hydraulic mine in the No. 15 seam. In addition they proceeded with investigations on their upper Fording River and Elk River properties north of the mine.

Kaiser Resources Ltd. continued production in the Harmer Ridge open-pit complex with coal being produced from six separate open-pit areas in the total complex. The bulk of the coal produced on Harmer Ridge came from Adit 29, Harmer No. 2, and Adit 40 open-pit areas. Following the removal of the dragline, the stripping of all overburden was done by shovels, trucks, and large-capacity front-end loaders. At the Michel Colliery coal production was slightly less than the previous year but again was close to one million short tons of raw coal. Underground operations continued in both the Hydraulic mine and the Balmer North mine. Production from the latter mine was seriously impaired due to an acute shortage of underground coal miners, the problem being somewhat eased toward the end of 1974, following the successful recruitment of about 50 coal miners from Great Britain. Almost all the coal produced, both at Harmer Ridge and Michel Colliery, was treated at the Elkview coal preparation plant, with only sufficient coal being directed to the Michel plant to supply the needs of the coke ovens, and also to supply the demands for steam coal.

Fording Coal Limited continued with its open-pit coal-mining operations at the Clode open pit on the east side of the valley and the Greenhills open pit on the west side of the

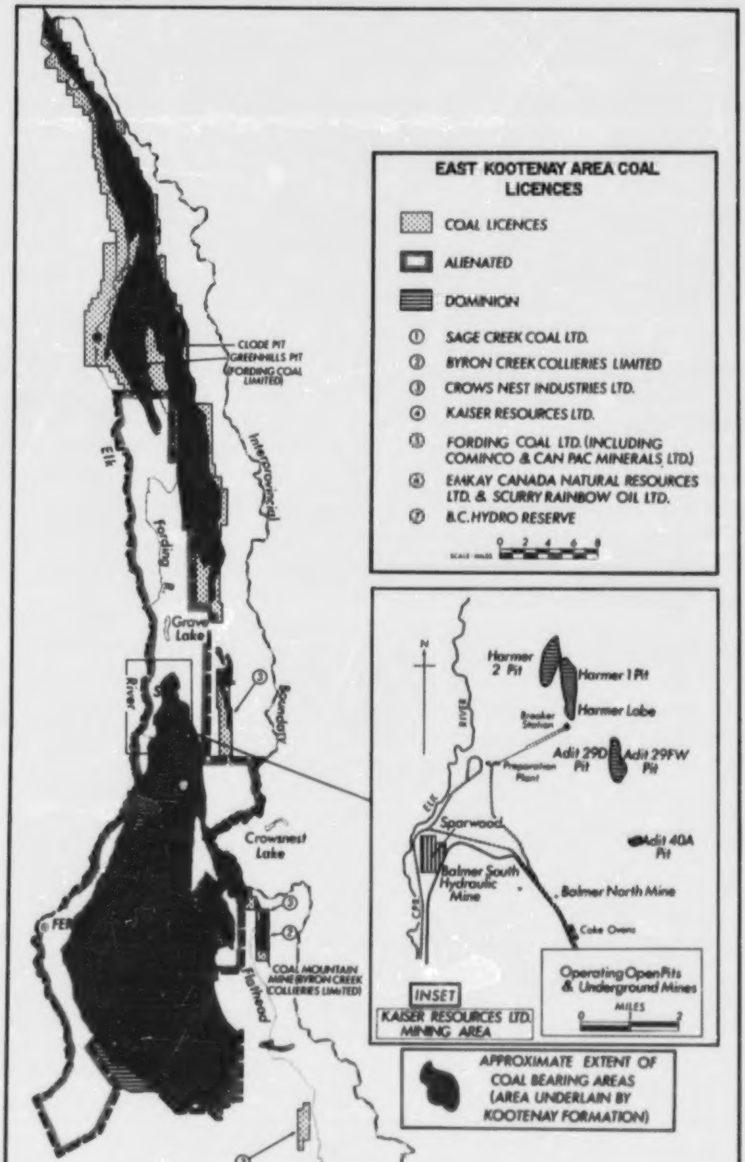
EAST KOOTENAY AREA COAL LICENCES
COAL LICENCES
ALIENATED
DOMINION
① SAGE CREEK COAL LTD.
② BYRON CREEK COLLIERIES LIMITED
③ CROWS NEST INDUSTRIES LTD.
④ KAISER RESOURCES LTD.
⑤ FORDING COAL LTD. (INCLUDING COMINCO & CAN PAC MINERALS LTD.)
⑥ EMKAY CANADA NATURAL RESOURCES LTD. & SCURRY RAINBOW OIL LTD.
⑦ B.C. HYDRO RESERVE
0 2 4 6 8
SCALE-MILES
CLODE PIT
GREENHILLS PIT
(FORDING COAL LIMITED)
Elk
Fording R.
Interprovincial
Boundary
Grave Lake
River
Crowsnest Lake
COAL MOUNTAIN MINE (BYRON CREEK COLLIERIES LIMITED)
Flathead
River
N
Harmer 2 Pit
Harmer 1 Pit
Harmer Lobe
Breaker Station
RIVER
Adit 29D Pit
Adit 29FW Pit
Preparation Plant
ELK
Sparwood
Adit 40A Pit
Balmer South Hydraulic Mine
Balmer North Mine
Coke Ovens
CPR
INSET
KAISER RESOURCES LTD. MINING AREA
Operating Open Pits & Underground Mines
MILES
0 1 2
APPROXIMATE EXTENT OF COAL BEARING AREAS (AREA UNDERLAIN BY KOOTENAY FORMATION)

Figure 38. Fernie Basin: geology and coal licences.

valley, and during the year developed an additional open-pit operation on Mount Turnbull which is situated immediately north and adjacent to the Clode open pit. Total production for the year was somewhat less than the previous year as a result of an eight-week work stoppage during the months of January and February.

SAGE CREEK COAL LIMITED

LOCATION:	Lat. 49° 06′ Long. 114° 34′ (82G/2E) In the lower Flathead Valley on Cabin Creek, approximately 2 miles upstream from its junction with the Flathead River.
LICENCES:	CL Nos. 374 to 407, 409 to 411, 603 to 605, 986 to 989, 1880 to 1886.
OWNER:	Sage Creek Coal Limited.
OPERATOR:	RIO TINTO CANADIAN EXPLORATION LIMITED, 120 Adelaide Street West, Toronto M5H 1W5, Ont.; R. A. Benkis, Geologist, Special Projects.

DESCRIPTION:

Kootenay Formation rocks underlie a comparatively narrow arcuate east-dipping belt along the easterly side of the Howell Creek structure, and are terminated on the northeast by the Harvey fault. Locally, as many as five seams of mineable thickness occur throughout the Kootenay sequence. Within this prospect, their structural attitude indicates a comparatively uniform dip-slope profile amenable to a strip-mine operation. To the south of Cabin Creek, structural continuity is broken by several closely spaced normal faults of relatively small displacement, which, however, may not seriously affect extraction by open-pit methods.

Aggregate thickness of the three commercial seams is approximately 100 feet. The coal is medium-volatile bituminous, with an average proximate analysis of 68 per cent fixed carbon, 23 per cent volatiles, 9 per cent ash, and 0.5 per cent sulphur, with FSI 6, and calorific value of 14,000 Btu per pound.

WORK DONE:

Work performed at the Sage Creek property during 1974 consisted of further underground sampling, surface drilling, and a small amount of reconnaissance geological mapping.

Two new adits were driven for a total footage of 950 feet, of which 280 feet were crosscuts. In addition, five old adits were entered and resampled. Seven bulk samples of approximately 12 tons each were sent for analyses and washability tests.

A drilling programme commenced at the end of May and continued through to the end of the year. A total of 31,338 feet was drilled in 47 rotary holes. An attempt was made to core certain coal horizons and approximately 320 feet of core was recovered. To provide access to the new drill sites, approximately 15 miles of new road was constructed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 574, 575.

BYRON CREEK COLLIERIES LIMITED

LOCATION:	Lat. 49° 30′	Long. 114° 40′	(82G/10E)
	On Coal Mountain, extending approximately 3 miles south of Corbin.		
LICENCES:	Lots 6997 and 6999 (private coal land).		
OWNER:	BYRON CREEK COLLIERIES LIMITED, Box 270, Blairmore, Alta.; E. Fabro, Vice-President and General Manager; V. H. Johnson, Consulting Geologist; M. Bianchini, Open-pit Superintendent.		

DESCRIPTION:

Kootenay Formation coal seams occur in complex multiple synclines controlled by folded reverse faults and imbricate slices. There are at least two seams of mineable thickness which are commonly intensely deformed and abnormally thickened. Underground mining between 1908 and 1935 was generally unsuccesful because of structural problems, and susceptibility of the coal to spontaneous combustion.

Production is from reserves contained in a double syncline plunging northward at 15 degrees to 30 degrees (No. 3 pit). Other proven reserves lie in the North Ridge pit which is separated from the No. 3 pit by three transverse faults. The coal is a medium-volatile bituminous but will not coke because of extensive oxidation. Mine run coal has rather high ash contents as the original partings were intimately mixed into the coal by crushing and shearing during deformation.

WORK DONE:

No exploration was performed on the property in 1974.

In January 1974, V. Nohels Logging Company of Fernie was awarded a contract to initially mine 250,000 tons of coal in No. 3 pit at Coal Mountain, Corbin. Mining operations involving removal of overburden and loading of coal commenced early in the month of June.

Equipment utilized included four 35-ton end-dump trucks, three 988 Caterpillar front-end loaders, six D-8 bulldozers, one D-9 bulldozer, and one 14-E grader. The overburden did not require drilling or blasting.

By the end of May road rehabilitation from McGillivray to Corbin was completed, and five steel bridges were installed at various creek crossings.

Work commenced early in May on the construction of the Canadian Pacific Railway spurline at the McGillivray coal stocking and loading area. A total of 5,900 feet of single line and 2,625 feet of shunting track was laid with final ballasting completed by the end of June 1974.

The coal cleaning plant site was prepared and the plant erected near Corbin during this construction period.

On July 31st the first train of Corbin coal was dispatched east for Ontario Hydro, this being the first train of coal mined at Corbin to leave the area since 1948.

Coal production statistics were: raw coal delivered to the plant, 214,786 tons; clean coal produced, 208,670 tons.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 575, 577.

KAISER RESOURCES LTD.

LOCATION: Lat. 49° 45′ Long. 114° 45′ (82G/10, 15)
Michel and Harmer Ridge areas, adjacent to Highway 3.

LICENCES: Lots 4588 and 4589 (private coal lands); CL Nos. 160 to 263, 500 to 506, and 564 to 571.

OWNER: KAISER RESOURCES LTD., Box 2000, Sparwood; R. W. MacPhail, Vice-President and General Manager; W. J. Riva, Vice-President, Mining Operations; L. W. Riffel, General Superintendent, Harmer Operations; G. K. Livingstone,Harmer Superintendent; J. S. Hampson, Superintendent, Maintenance; A. W. Grimley, Superintendent, Underground Mining; L. J. Lindsay, Superintendent, Coal Processing.

DESCRIPTION:

Kaiser Resources Ltd.'s lands contain the major coal reserves of the Fernie Basin. The Kootenay Formation, which attains a thickness of about 2,200 feet, underlies the entire basin and outcrops along a prominent peripheral escarpment below Blairmore conglomerates. The formation terminates northward in a broadly synclinal pitch culmination in the Michel Creek area, where it contains up to 10 mineable seams, ranging in thickness from 5 feet to 55 feet, with aggregate coal thickness in excess of 150 feet.

Currently, only the north end of the basin is under active development. This includes the Harmer Ridge open-pit complex, the South Balmer hydraulic mine, and the North Balmer underground mine. All extraction is from the No. 10 (Balmer) seam, which averages about 50 feet in thickness.

Development in the Harmer Ridge area is in a broad, mildly deformed upper thrust plate on the east limb of the syncline. Dip of the Balmer seam within the pit flattens westward and southward from about 20 degrees. Minor fault repetition occurs within the pit, and substantial displacement along the West Harmer normal fault limits the westerly extent of current pit operations.

The 'main block' reserves of the Adit 29 and Camp 8 area have a similar configuration, whereas those of the Camp 40 area to the east are in the underlying plate of Kootenay Formation. Here the sequence is generally more deformed, with multiple repetition by low-angle thrust faults.

The South Balmer hydraulic mine is situated at the north end of Sparwood Ridge, in the west limb of the syncline. Within the hydraulic development area, which extends up-dip from the previous underground workings, the dip of the Balmer seam is 35 degrees to 45 degrees northeast, and maximum cover is about 800 feet.

WORK DONE:

During 1974, the company continued to mine the open pits on Harmer Ridge and the two underground mines at Michel. Most of the Harmer Ridge production was derived from Adit 29A, Adit 40A, and Harmer No. 2 open pits, whereas the bulk of the underground coal was produced from the South Balmer hydraulic mine. The raw coal was processed at the Elkview preparation plant, and loaded there into unit trains for dispatch to the Roberts Bank port terminal. The by-product plant at Michel continued to produce coke, 'breeze,' and coal tar throughout 1974. Work continued in exploration, development, and land reclamation during the year.

Location	New Road Construction (miles)	Existing Road Restoration (miles)	Geological Mapping		Trench Clean-up (feet)	Adits Driven		Holes Drilled	
			Reconnais-sance (acres)	Detail (acres)		No.	Total Footage	No.	Total Footage
MICHEL AREA									
Underground mining									
Natal Ridge	---	---	---	---	---	---	---	2	2,696
Open-pit mining									
Harmer Ridge									
Adit 29 pit	---	---	---	---	---	---	---	2	800
Adit 29FW pit	---	---	---	---	---	---	---	8	1,120
Balmer East area									
Harmer Knob East	0.3	5.1	303	160	---	1	280	10	3,480
Adit 40 East	---	3.7	---	---	---	---	---	5	1,820
Baldy Ridge									
5 and 6 Seams	0.1	2.3	---	440	---	*	100	16	2,871
7 Seam	---	2.0	---	---	---	1	255	14	2,420
HOSMER-WHEELER	5.5	---	3,500	---	1,600	1	170	17	19,225
ELK VALLEY									
Greenhills Ridge	3.4	10.5	---	1,000	---	10	1,623	---	---
Burnt Ridge extension	---	3.0	---	---	---	---	---	---	---
TOTAL	9.3	26.6	3,803	1,600	1,600	13	2,428	74	34,432†

*One existing adit was lengthened.

†All drilling was done with rotary drills with the exception of Hosmer-Wheeler area where 15 bore holes (totalling 17,290 feet) were completed using core drills.

OPEN-PIT MINING: L. M. Dwarkin, Chief Mine Engineer; J. B. Murphy, Chief Geologist.

Production from the individual open pits situated within the Harmer Ridge mine complex was as follows:

Pit	Overburden Removed bank cubic yards	Metallurgical Coal Produced tons	Steam Coal Produced tons
Harmer 1	736,000	869,000	11,000
Harmer Lobe	51,000	309,000	36,000
Harmer 2	12,007,000	1,121,000	107,000
Adit 29	24,307,000	2,038,000	21,000
Adit 29FW	2,828,000	392,000	36,000
Adit 40A	451,000	1,518,000	125,000
Totals	40,380,000	6,247,000	336,000

The dragline which had been used at the beginning of the project was removed from the property and all stripping during the year was done by shovels, loaders, and trucks.

Total rock production drilling was 1,536,000 feet. Total explosives of 36,293,000 pounds were used for rock breakage, including 24,047,000 pounds of AN/FO and 12,246,000 pounds of slurry. The coal was not drilled.

Two 834 wheel dozers and one 60-R drill were added during the year. Principal equipment in use at year-end was: four 25-yard shovels, three 15-yard shovels, two 10-yard shovels, five 60-R drills, one 45-R drill, twenty 200-ton trucks, twenty-eight 100-ton trucks, four front-end loaders, and twenty-two track and wheel dozers.

DEVELOPMENT AND EXPLORATION GEOLOGY: Areas where exploration work was performed included the Michel Valley, Hosmer-Wheeler Ridge, and the Elk Valley coal lands. In the Michel Valley work related to the underground mine was completed on Natal Ridge and for the open-pit mines on Baldy and Harmer Ridges. In the Hosmer-Wheeler Ridge area extensive exploration related to a new underground mine facility was conducted under the terms of a joint venture agreement between Kaiser Resources Ltd., Mitsui Mining Company, Limited, and Mitsubishi Corporation. In the Elk Valley area work was primarily confined to the Greenhills Ridge where adit work and drill site preparation were performed.

RECLAMATION AND ENVIRONMENTAL CONTROL: Slash disposal and clean-up were carried out adjacent to 3 miles of access road work in the Burnt Ridge extension.

The following is a summary of reclamation work during 1974: hydraulic mine site, 15 acres, fertilizing; hydraulic spoil pile, 5 acres, resloping, seeding, fertilizing, planting; hydraulic berm, 2 acres, fertilizing; Michel pile, 16 acres, seeding, planting, fertilizing; Michel south, 5 acres, seeding, fertilizing; Sparwood slide, 10 acres, seeding, planting, fertilizing; B lagoon, 15 acres, planting, fertilizing; conveyor cut, 13 acres, fertilizing; preparation plant area, 7 acres, fertilizing; Chalet Road, 3 acres, planting; Erickson, 33 acres, seeding, planting, fertilizing; 7 A, 7.5 acres, planting, fertilizing; Baldy, 12.8 acres, seeding, fertilizing; Baldy slopes, 33 acres, seeding, planting, fertilizing; hospital area, 22 acres, fertilizing; Trites Woods, 7 acres, fertilizing; hotel site, 9 acres, fertilizing; Lower C seam and corridor, 16.3 acres, seeding, planting, fertilizing; C seam and strip, 12 acres, seeding, planting, fertilizing; D seam, 10 acres, seeding, planting, fertilizing; waterholes, 3 acres, seeding, planting, fertilizing; A lagoon, 11 acres, seeding, fertilizing; assembly pad, 17.5 acres, site preparation, seeding, fertilizing; McGillivray, 26 acres, planting, fertilizing; hydraulic screens area, 5 acres, hydroseeding; Harmer haul road, 45 acres, seeding; No. 1 hydraulic rock tunnel, 10 acres, seeding; road behind Daniels, 5 acres, seeding; Grave Lake Road, 2 acres, seeding; total treated, 388.1 acres.

A total of 70,000 trees was planted during 1974. Resloping of Harmer Knob was continued in an attempt to reduce the overall slope angle to 22 degrees with benches at 50-foot intervals vertically. During the season a total of 102,000 cubic yards of spoil was moved by two bulldozers.

Experimental work was continued to determine new techniques and species for the programme. A vegetation assessment of reclaimed lands was developed so that more positive results could be obtained. The results of this assessment will show which grass, shrub, and tree species should be used on specific areas.

This past year a section of the reclamation department was specifically engaged in cleaning up exploration areas. In this area a total of 63 acres was reclaimed.

ELKVIEW PREPARATION PLANT: L. J. Lindsay, Superintendent.

Raw coal from the Harmer open pits and the two underground mines was broken to 4 by 0 size range, and stored in four silos of 8,000 tons total capacity. The coal was then moved by conveyor into the preparation plant where it was divided into four size ranges for treatment. The 4 by 3/8-inch coal was treated in heavy media vessels, the 3/8 by 28 mesh in heavy media cyclones, the 28 by 100 mesh in hydrocyclones, and the minus 100 mesh was treated by flotation.

The clean minus 3/8-inch coal was dried in a fluid bed thermal dryer, and added to the clean coarse product for storage in four silos of 60,000 tons total capacity. Unit trains were loaded from the base of the clean coal silos.

Coarse refuse from the plant was hauled by scrapers to the spoil area where it was layered and compacted. The minus 28 mesh tailings were fed into lagoons for dewatering.

The preparation plant yielded about 5,600,000 tons of clean coal from a throughput of approximately 7,300,000 tons during the year for an overall yield of a little over 76 per cent.

MICHEL COLLIERY: A.W.T. Grimley, Mine Manger; J. Anderson, Assistant Mine Manager; W. Davey, Superintendent, Balmer Hydraulic Mine; H. Eberts, Superintendent, Balmer North Mine; A. Webster, Safety Co-ordinator; G. Lancaster, Superintendent, Surface Operations.

The colliery is situated at Michel, on the Crowsnest Branch of the Canadian Pacific Railway, 24 miles east of Fernie. The colliery comprises two mines, developed in the No. 10 (Balmer) seam.

Both underground mines were regularly inspected during the year, and throughout 1974 all report books kept at the mines, in accordance with the provisions of the *Coal Mines Regulation Act,* were examined and found in order.

Monthly examinations were made by the Miners' Inspection Committee at both the underground and surface operations. Regular monthly meetings were held at the company offices by the inspection and safety committee, in accordance with the provisions of Section 21 of the *Coal Mines Regulation Act.*

BALMER NORTH MINE: This mine is situated on the north side of the valley. The seam is approximately 50 feet thick, dips 20 degrees in a southwesterly direction, and contains good quality low-volatile coking coal.

The method of working the seam in this mine is by mechanized room development and partial pillar extraction. A panel system is used, with the main multiple entries being driven against the hangingwall of the seam and in the direction of strike of the seam. The method of work has been adequately described in former Annual Reports of the Minister of Mines and Petroleum Resources, and there was no change in the method or the equipment used during 1974. Development continued in No. 302 panel and coal was extracted in 303 panel, but production was limited by a shortage of manpower.

Ventilation is by a Joy electrically driven 400-horsepower exhausting fan, providing the mine with approximately 275,000 cubic feet per minute of ventilation. A 600-horsepower diesel standby drive is available to operate the mine fan in the event of an interruption to the power supply. During cold winter months, two Joy 100-horsepower forcing fans are used, in conjunction with mine air heaters, to safeguard against freezing problems in the two main intake rock tunnels serving the mine.

Total production from the mine during 1974 was 107,066 tons.

SOUTH BALMER HYDRAULIC MINE: The mine is situated on the south side of Michel Creek. The Balmer seam here is approximately 50 feet thick, dips approximately 45 degrees northeast, and yields a low volatile good quality coking product.

The system of working the seam is described as hydraulic panel, with the main entries and sublevels being driven to the rise at about a 7-degree inclination. The system of hydraulic mining has been adequately described in previous Annual Reports of the Minister of Mines and Petroleum Resources. Production was interrupted for two weeks in February by spontaneous heating in 3 sublevel, 4B panel. Coal was taken exclusively from No. 4 panel with the hydraulic monitor while development of No. 5 panel continued until its completion late in the year.

MICHEL BY-PRODUCT PLANT: G. Lancaster, Superintendent; T. Melville, Foreman.

During 1974, 156,388 tons of coke and 836,858 gallons of coal tar were produced.

MICHEL PREPARATION PLANT: G. Lancaster, Superintendent.

Coal is hauled to the plant by truck from the mine and dumped into storage silos, thence it is moved by belt conveyors to the plant where it is sized and screened. The minus ¼-inch size range is diverted to storage bins and then used in the by-product plant for the production of coke and coal tar. The above ¼-inch size range is loaded for commercial use, or transported for treatment to the Elkview coal preparation plant. In 1974, 237,786 raw tons of metallurgical coal and 460,420 raw tons of thermal coal were processed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, pp. 577-581.

FORDING COAL LIMITED

LOCATION: Lat. 50° 12′ Long. 114° 52′ (82J/2W)
The property is situated in the upper Fording Valley, approximately 30 miles north of Sparwood.

LICENCES: CL Nos. 314 to 364, 419, 420, 507 to 511, 536 to 539, 541, 543, 545, 547, 549, 551, 553 to 560, 801 to 804, 943, 944, and 964.

OWNERS: Fording Coal Limited, Canpac Minerals Limited, and Cominco Ltd.

OPERATOR: FORDING COAL LIMITED, Box 108, Sparwood.

DESCRIPTION:

Kootenay Formation coal seams occur in two broad north-trending synclines, situated one on either side of the Fording River, which is the locus of the regional west-dipping Erickson fault. Ten seams of significant thickness are present in the currently developed mine areas located on the east limb of the Greenhills syncline (Greenhills pit) and west limb of the Eagle Mountain syncline (Clode pit). The latter structure is complicated by a flat-lying thrust fault in the lower slope of Turnbull Mountain, resulting in repetition of the lowest seam ('Repeat 4' pit). Plant site elevation in the valley bottom is 5,500 feet, with the coal outcrop in the Eagle Mountain section ranging up to 7,300 feet.

WORK DONE:

Production from the Greenhills dragline pit and the Clode truck-shovel pit continued throughout the year. A new truck-shovel pit was opened in the Turnbull area.

EXPLORATION AND DEVELOPMENT: During 1974, exploration programmes were actively pursued in the following areas, which are within 3 to 4 miles from the Fording plant site.

Seam 15 Definition and Coal Quality: Seventeen centre-return rotary holes were drilled for a total of 7,141 feet. Seam 15 outcrop trenching totalled 13,400 feet. This work provided the preliminary data for hangingwall and footwall contours, seam isopachs, and coal quality to enable a hydraulic mining scheme to be planned.

Eagle Mountain East Limb Area, Upper Clode Creek: In this area 13 centre-return rotary holes where drilled for a total of 5,801 feet. A track-mounted backhoe was used to dig test pits along previous drill access roads wherever coal seam occurrences were indicated by 'bloom' in the overburden or rubbly bedrock. These test pits were backfilled after they had been mapped and surveyed.

Henretta Mountain Area: About 2.5 miles of access road was built to provide drill sites along the east limb of the Eagle-Turnbull-Henretta syncline on the lower northwesterly face of Henretta Mountain. Drilling here totalled 5,349 feet in 12 holes. Backhoe test pits were excavated and geological mapping was done.

Southwest Eagle Mountain: Seven centre-return rotary holes were drilled in this area, for a subtotal of 2,343 feet. Minor seam trenching and geologic mapping were done.

Greenhills South Upper Seam Area: Four rotary holes (centre-return) were completed in this area for a total of 1,662 feet.

Elk Valley Exploration: Six holes were attempted with a large truck-mounted rotary drill with both compressed air and mud circulation capacity. Two holes along the forestry access road on the west side of the Elk River had to be abandoned in deep gravel and sand overburden. Of four holes drilled along the Kan-Elk powerline road on the east side of Elk River, two were abandoned in friable, caving Fernie Formation below the Kootenay coal measures. Total footage in the six holes was 1,310 feet.

A complementary programme of preliminary seam section assays for percentage ash and FSI determinations was done for all significant coal seams intersected. Complete seam composites were sampled for proximate analyses plus percentage of sulphur and FSI. Gamma-ray neutron radiation logs were performed on all holes of the 1974 exploration season.

Also during 1974, a total of 56 engineering drill holes was completed in or immediately adjacent to Clode, Greenhills, or Turnbull pits. Total footage of engineering drilling for seam outline data was 9,331 feet. This was drilled partly by Fording crews and partly by contractors. Approximately 60 per cent of the engineering-type holes were radiation logged.

MINE PRODUCTION: Employees increased from 135 staff and 549 general on December 31, 1973 to 153 staff and 693 general on December 31, 1974, a total at year-end of 846 employees.

Golder Brawner and Associates inspected and reported quarterly on the Clode spoil dump stability, and generally endorsed operating and monitoring techniques used.

CLODE CREEK PIT (including 'Repeat 4'): Mining continued down to the 6253 bench during the year. Quantities excavated were as follows: waste, 8,630,471 cubic yards; metallurgical coal, 1,225,251 long tons; oxidized coal, *nil.* Average strip ratio was 7:1 (cubic yards to long tons).

GREENHILLS PIT: Continued dragline production yielded the following: waste (including rehandle), 6,350,123 cubic yards; metallurgical coal, 1,585,717 long tons; oxidized coal, *nil.* Average strip ratio was 4:1.

TURNBULL PIT: Mining commenced during the latter part of the year and progressed down to the 5760 bench. Quantities excavated were as follows: waste, 275,764 cubic yards; metallurgical coal, 29,467 long tons; oxidized coal, *nil.* Average strip ratio was 9.4:1.

SUMMARY OF MINE QUANTITIES: *Material quantities:* waste, 15,256,358 cubic yards; metallurgical coal, 2,840,435 long tons; oxidized coal, *nil;* total, 18,096,793 cubic yards. *Blasting agents consumed:* bulk AN/FO, 6,961,917 pounds; bulk slurry, 3,340,801.

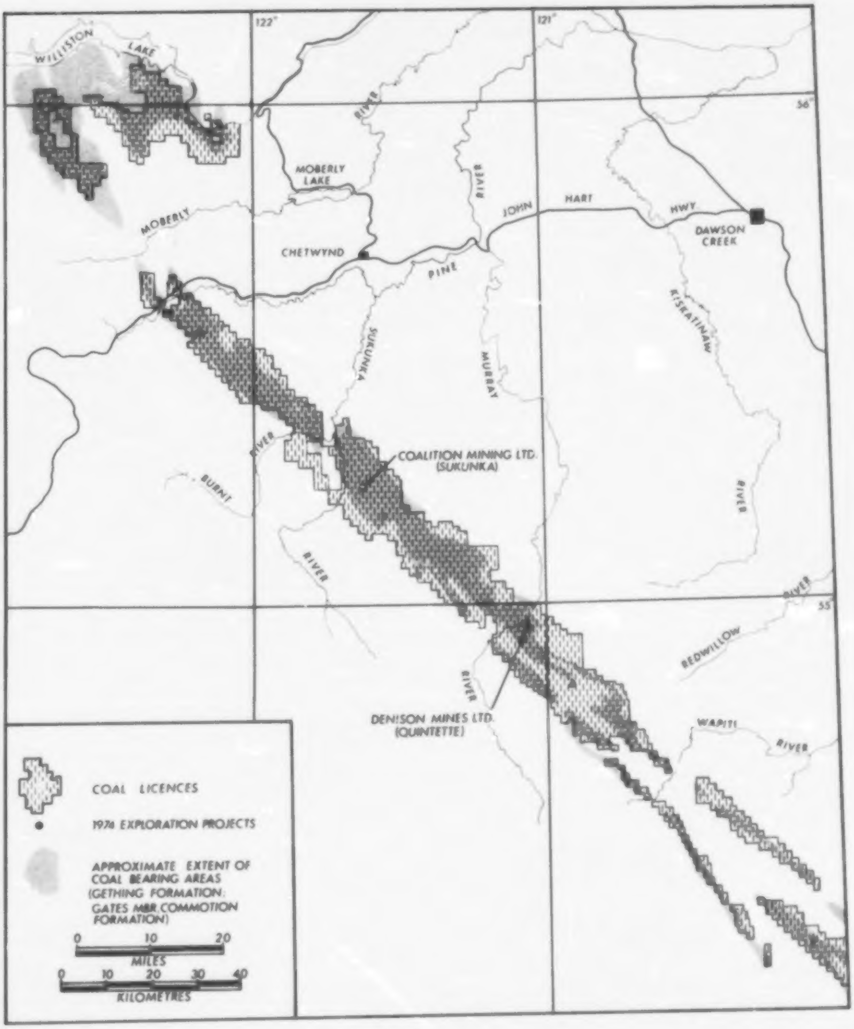
WILLISTON
LAKE
122°
121°
56°
RIVER
MOBERLY
LAKE
RIVER
JOHN
HART
HWY
DAWSON
CREEK
MOBERLY
CHETWYND
PINE
SUKUNKA
MURRAY
KISKATINAW
RIVER
COALITION MINING LTD.
(SUKUNKA)
BURNT
RIVER
RIVER
RIVER
55°
BEDWILLOW
RIVER
DENISON MINES LTD.
(QUINTETTE)
WAPITI
RIVER
COAL LICENCES
1974 EXPLORATION PROJECTS
APPROXIMATE EXTENT OF COAL BEARING AREAS (GETHING FORMATION: GATES MBR.COMMOTION FORMATION)
0 10 20
MILES
0 10 20 30 40
KILOMETRES

Figure 39. Foothills Belt, Northeastern British Columbia: geology and coal licences.

PROCESSING: Statistics for the year are as follows: raw coal treated, 1,950,328 long tons; cleaned coal produced, 2,012,124 long tons; cleaned coal shipped by road, 1,004,593 long tons; average analysis of product (air dried): ash, 10.1 per cent; volatile, 21.6 per cent; fixed carbon, 67.6 per cent; sulphur, 0.32 per cent; FSI, 6.4. The tailings dam was raised 10 feet.

TOWNSITE: During the year a further 23 homes and a 30-unit apartment were completed. Another 30-unit apartment and a 190-lot home subdivision and recreation centre consisting of skating rink, curling rink, library, and community hall were started during 1974 and were well advanced at year-end.

Single accommodation is available for 436 men. Married accommodation included 246 detached homes, 191 mobile homes, and 30 apartments.

NORTHERN INSPECTION DISTRICT

By D.I.R. Henderson and R. D. Gilchrist

COALITION MINING LIMITED

LOCATION: Lat. 55° 14' Long. 121° 38' (93P/4E)
Sukunka River area, 36 miles south of Chetwynd, on the west slope of Bullmoose Mountain.

LICENCES: CL Nos. 3089 to 3129.

OWNER: National Trust Company Limited.

OPERATOR: COALITION MINING LIMITED, 1103, 1177 West Hastings Street, Vancouver; N. E. Roberts, Operations Manager; J. Burns, Mine Manager; G. Wallis, Project Geologist.

DESCRIPTION:

Coal is present in the Sukunka area in both the Gates Member of the Commotion Formation and the Gething Formation. No seams thicker than 4 feet are known in this area in the Gates Member and hence exploration has been concentrated on the Gething Formation which is approximately 800 feet thick. Eight coal seams are known in the Gething, four of which are in the lower 150 feet of the formation. The upper two of these lower four seams are known as the 'Middle coals' and contain numerous claystone bands. The two major seams are the Chamberlain and Skeeter seams which are approximately 600 and 625 feet respectively above the base of the Gething Formation. The Bird seam is in the uppermost 10 feet of the formation.

The Gething strata on the Sukunka property are within a broad relatively undeformed syncline bounded on the northeast by the Bullmoose Fault Complex, an extensively faulted major anticlinal structure. Within the syncline the gently dipping strata have been dislocated into three blocks or structural plates by a series of thrust faults.

Two major thrust faults, the Chamberlain fault and the Skeeter fault, form the western and eastern boundaries respectively of Plate 2. Plate 1 lies to the west and Plate 3 to the east. Plate 2, the largest of the three structural plates is itself cut by several smaller thrust faults. Gentle undulatory folding is also present in the property with axes oriented southeasterly parallel to the thrust faults. The regional plunge is southeast in the northern part of the property and northwest in the southern part.

The Chamberlain seam is 8 feet thick over much of the property and ranges up to 13 feet in places on Plate 2. The seam is split into a lower and upper bench but only the lower is mineable and has been included in the reserves. The Skeeter seam occurs throughout the area but mineable thicknesses occur only in the northern sector. This seam is 7 feet or more thick in Plate 1 and the northern part of Plate 2. Locally it thickens to 13 feet.

WORK DONE:

In 1974 no work was done on the property until September when exploration for surface mineable coal began. Two programmes were carried out; the first on the western extremity of the Plate 1 area and the second in the Middle coals area. Four diamond-drill holes totalling 409 feet in depth and eight rotary-drill holes totalling 647 feet succeeded in proving a small amount of reserves in the Chamberlain seam in the Plate 1 area. Five diamond-drill holes totalling 1,679 feet and 23 rotary-drill holes totalling 4,631 feet proved a significant amount of surface mineable coal in the northern end of the property in the Middle coals which lie in the lower Gething sequence below the Chamberlain and Skeeter seams.

In October, trial mining, which had not been done since December 1973, resumed but due to machine difficulties and a major surface fire only 300 feet of advance was made by year-end. Approximately 16,000 tons of stockpiled coal was shipped to the United Kingdom for sale to British Steel.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 586.

DENISON MINES LIMITED (QUINTETTE PROJECT)

LOCATION: Lat. 54° 55' Long. 121° (93I/14, 15; 93P/3)
Seventy miles southwest of Dawson Creek, along the foothills between Bullmoose and Kinuseo Creeks.
LICENCES: CL Nos. 3279 to 3406, 3592 to 3606, 3618 to 3633.
OWNER: Quintette Coal Ltd. (Denison Mines Limited, Alco Standard Corporation, Mitsui Mining Company, Limited, and Tokyo Boeki Ltd.).
OPERATOR: DENISON MINES LIMITED (Coal Division), 1500, 444 Fifth Avenue SW., Calgary, Alta.; A. A. Johnson, Chief Geologist; G. P. Cormley, Project Manager.

DESCRIPTION:

The Quintette project covers an extensive licence area of over 96,000 acres and extending approximately 15 miles both northwest and southeast of the Murray River. Coal seams of mineable thickness occur within the Gates Member of the Commotion Formation and the Gething Formation with the Gates containing the major portion of the reserves especially in the Babcock area. The Gates attains a stratigraphic thickness of 1,150 feet. There are six seams of mineable thickness in the Babcock area, but only three are relatively clean with thicknesses in excess of 10 feet. The seams are generally gently dipping under Babcock Mountain but dip steeply to the southwest into the Waterfall Creek syncline. All coal is medium volatile bituminous with exceptionally high fluidity and good coking and cleaning characteristics in general. Reserves outlined to date indicate major underground reserves, much of which may be suitable for hydraulic mining. Limited reserves of surface mineable coal are present on the property.

WORK DONE: Approximately 5,000 acres of detailed geological mapping was done in the Wolverine area of the property. In addition three diamond-drill holes totalling 2,005 feet were drilled, logged, and analysed. Two hundred feet of roadside trench was dug and 5 miles of road was constructed. In the Babcock area extensive detailed geological mapping, totalling some 10,000 acres, was done by both Denison and Mitsui geologists. Three diamond-drill holes totalling 2,733 feet were drilled, logged, and analysed.

BULKLEY VALLEY COLLIERIES LTD.

LOCATION: Lat. 54° 35′ Long. 127° 10′ (93L/11E)
On Goathorn Creek, 7 miles southwest of Telkwa.

LICENCES: CL Nos. 164, 443 to 448, 522 to 527, 561 to 563, and 643 to 646, plus six Crown-granted lots.

OWNER: Bulkley Valley Collieries Ltd.

OPERATOR: BULKLEY VALLEY COAL SALES LTD., Box 39, Telkwa; Lloyd Gething, Manager.

WORK DONE: The mine operated intermittently during the year, with total production of 378 tons of product coal. Production is from a good seam of coal, approximately 12 feet in thickness. Calorific value of the coal is reported to be 14,000 Btu per pound, with 10 to 12 per cent ash content. One man is employed part time.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1973, p. 589.

OTHER DISTRICTS

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY (HAT CREEK PROJECT)

LOCATION: Lat. 50° 46′ Long. 121° 36′ (92I/13E)
Fifteen miles west-northwest of Ashcroft.

LICENCES: Crown Grant 83912E, CL Nos. 12, 144, 2753 to 2762, 2991 to 3013.

OWNER: BRITISH COLUMBIA HYDRO AND POWER AUTHORITY, 970 Burrard Street, Vancouver; H. M. Ellis, Manager, Systems Engineering Division.

DESCRIPTION:

The upper Hat Creek valley is underlain by Tertiary sedimentary strata for a length of 16 miles and an average width of about 3 miles. These sedimentary strata are apparently contained in a graben-like structure. Volcanic rocks lying adjacent to the faults form the valley walls and the north and south limits to the sedimentary rocks in the valley. The Coldwater Formation contains all the sedimentary strata and is believed to be in the order of 10,000 feet thick in the upper Hat Creek valley. It lies unconformably on volcanic rocks of the pre-Tertiary Cache Creek Group. The coal measures occupy some 4,000 feet in the middle of the sequence and of this 2,000 feet are comprised of coal intercalated with siltstone and shale. Selective mining of the coal will produce a product of approximately 6,000 Btu per pound (M.A.F.) and 28 per cent ash. The coal is ranked as sub-bituminous B and C. The structure of the coal measures is not accurately known but dips from gentle to vertical have been recorded. A few significant faults have been identified by geophysical and other methods and numerous smaller faults have been seen in the cores.

WORK DONE:

Twenty-five diamond-drill holes totalling 35,446 feet and two rotary holes totalling 2,015 feet were drilled in 1974. FSI, petrographic, plasticity, washability, grindability, fusibility tests and proximate and ultimate analyses were performed on the coal. In addition chemical analyses of the ash were done. Some of the holes were logged with varying combinations of caliper, density, gamma, neutron, and resistance tools. Infra-red heat sensing and magnetometer surveys were run and test programmes were conducted for electromagnetic, resistivity, and gravity techniques.

The work was supervised by P. J. Street of Dolmage Campbell and Associates Ltd.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
(SUQUASH PROJECT)

LOCATION: Lat. 50° 38' Long. 127° 15' (92L/11)
Northeast Vancouver Island, between Fort Rupert and Port McNeill.
LICENCES: CL Nos. 2110 and 2111.
OWNER: Cobre Exploration Limited.
OPERATOR: BRITISH COLUMBIA HYDRO AND POWER AUTHORITY, 970 Burrard Street, Vancouver; H. M. Ellis, Manager Systems Engineering Division.

DESCRIPTION:

An erosional remnant of Upper Cretaceous sedimentary rocks of the Nanaimo Group forms the Suquash Basin. Unconformably underlying the Nanaimo Group rocks are Jurassic and Triassic volcanic rocks of the Bonanza Subgroup and Karmutsen Formation. The strata are in the form of a shallow northeast-plunging syncline with gentle dips usually less than 5 degrees. Broad secondary anticlinal structures trending parallel to the regional basin syncline are present. Faults bound most of the basin and minor faulting may occur within the basin. Coal is present in zones which in addition to coal contain intercalated shaly coal, coaly shale, carbonaceous shale, shale, fireclay, and sometimes sandstone. No clean mineable thicknesses of coal appear to be present in the basin. Nine coal zones have been identified but only two of these can be correlated with any success.

WORK DONE: Four NQ diamond-drill holes totalling 2,802 feet were completed; 20,500 feet of road was constructed; and 943 acres were geologically mapped at a reconnaissance level.

NETHERLANDS ACCEPTANCE CORPORATION LTD.

LOCATION:	Lat. 49° 31′ Long. 120° 15′ (92H/10) Two miles south of Tulameen.
LICENCE:	CL No. 153.
OWNER:	T. G. Stout.
OPERATOR:	NETHERLANDS ACCEPTANCE CORPORATION LTD., 1912, 1177 West Hastings Street, Vancouver.
DESCRIPTION:	Within the Tulameen Basin coal seams occur in the Tertiary Allenby Formation of the Princeton Group. Mineable thicknesses of coal are localized in zones near the middle of the formation. Volcanic rocks lie unconformably both beneath and above the sedimentary strata. The basin has been folded into a northwest-trending syncline with a gently dipping southwestern limb and a moderate to steeply dipping northeastern limb.
WORK DONE:	One NQ core hole was drilled to a depth of 342 feet. The coal seam was traced on the surface.

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